

... the Universal trend in packaging industrial
Electronics and Advanced Instrumentation.

Tomorrow's Designs Today!

As the techniques of Alden Plug-in Unit Construction become more standardized throughout the world — those already designing to these standards will be far in advance of competition because:

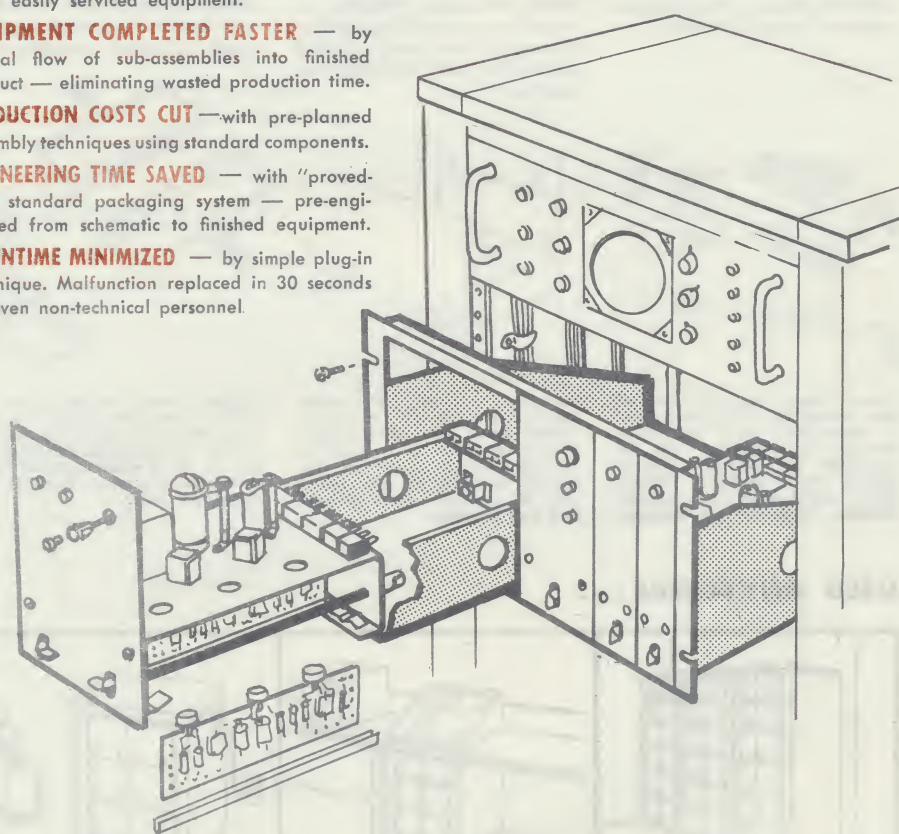
EQUIPMENT IS MORE FUNCTIONAL — ready to move in quickly, set up anywhere to assure user of immediate operation, more reliable, more easily serviced equipment.

EQUIPMENT COMPLETED FASTER — by logical flow of sub-assemblies into finished product — eliminating wasted production time.

PRODUCTION COSTS CUT — with pre-planned assembly techniques using standard components.

ENGINEERING TIME SAVED — with "proved-out" standard packaging system — pre-engineered from schematic to finished equipment.

DOWNTIME MINIMIZED — by simple plug-in technique. Malfunction replaced in 30 seconds by even non-technical personnel.



Because the system is completely modular, the basic components can be kept in stock — ready to be quickly made up for any application.

Plug-in Unit Construction features "sell" prospective customers on finished equipment. Built-in reliability and fool-proof servicing convince prospects who otherwise put "thumbs down" on complicated electrical or electronic control equipment.

PLUG-IN UNIT CONSTRUCTION

Equipment can be moved-in quickly and set up anywhere for immediate operation!



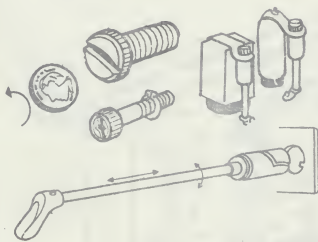
SHIPPED INTACT—all components mounted securely in place.



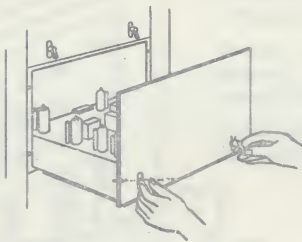
MOBILE OR EASILY PORTABLE — modular construction permits separation into easily handled sections for quick installation or removal.



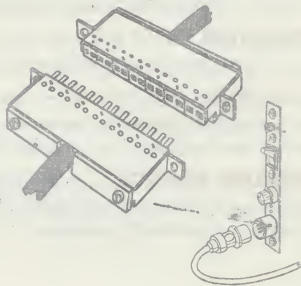
IMMEDIATE OPERATION — equipment can be designed for quick, readily accessible connections.



Unique Alden fastening devices have utmost flexibility—hold plug-in components and assemblies securely in place yet can be locked-on or released without special tools. Exclusive designs permit rapid installation without precision alignment requirements.

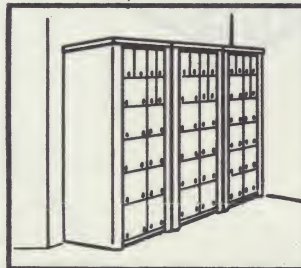


Equipment is constructed in building block modules which are easily broken down into self-contained plug-in sections for portability. Complete circuit assemblies disconnect mechanically and electrically by a simple turn of Serve-a-Unit lock handles.

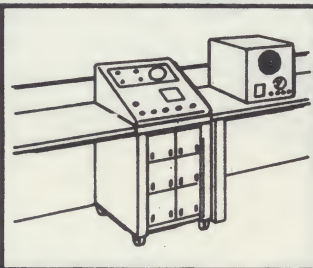


Logical, orderly arrangement of circuitry and plug-in units makes it possible to bring all inputs/outputs to easily accessible point — permits use of easily installed connect-control-monitor elements in convenient area.

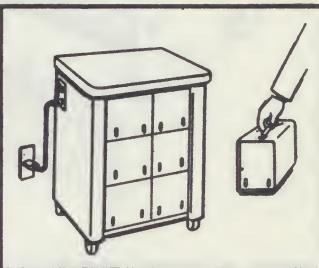
USED ANYWHERE . . .



AGAINST BULKHEADS — Unique design permits operation and servicing entirely from front.



UNDER BENCHES — Modular sizes permit including as "under the counter" control unit — convenient, yet out of way in automatic production lines.



MOBILE UNITS AND PORTABLE INSTRUMENTS — Rugged construction, easy accessibility and modular design permits subdivision into various size units.

PLANNING SHEETS

Alden Products planning sheets are full scale reproducible sheets available at the customers request for fast, convenient planning of his layouts. Below is a list of various types.

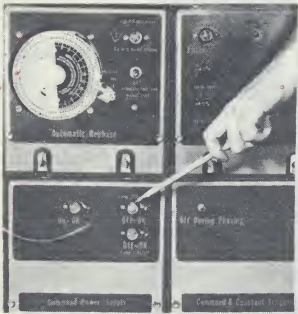
Order Number	Planning Sheet
PICS-2FP	2" Front Panel
PICS-4FP	4" Front Panel
PICS-8FP	8" Front Panel
PICS-2C	Template for punching 2" Chassis
PICS-4C	Template for punching 4" Chassis
PICS-8C	Template for punching 8" Chassis
PICS-SUL	Alden Serve-a-Unit Lock
PICS-MSUL	Alden Miniature Serve-a-Unit Lock
UPS-3	"20" Packages with Terminal Card Layout #650-20-2
UPS-4	"20" Packages with Terminal Card Layout #650-20-1 or #650-20-3
UPS-11	"11" Packages with Terminal Card Layout #650-11-1
UPS-7/9	"7" and "9" Packages with Terminal Card Layout #650-7-1 and #650-9-1
UPS-1A	Alden Basic Chassis Card #650ATMS-1
UPS-1B	Alden Terminal Card Mounting System-Card #650ATMS-1B
PCS-1	2 to 11 Pin Non-interchangeable Plugs
PCS-2	2 to 11 Pin Non-interchangeable Connectors

When ordering any of the above planning sheets please include Order Number and quantity wanted. Send order to:

ALDEN PRODUCTS COMPANY
117 North Main Street, Brockton, Massachusetts

ALDEN PLUG-IN UNIT CONSTRUCTION

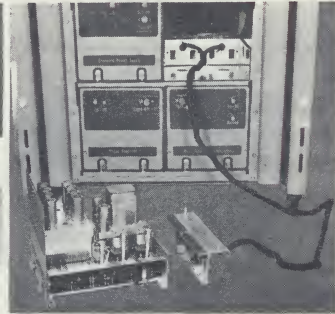
Down time reduced to 30 seconds replacement by non-technical personnel!



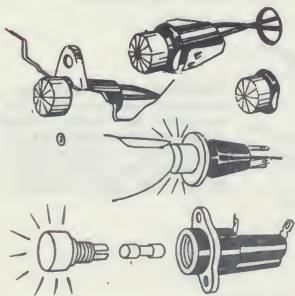
TROUBLE-SHOOTING SIMPLIFIED — Quick front panel checks isolate any malfunction to a specific unit. Elements subdivided by function into modular units — tiny Alden "tell-tales" spot trouble instantly.



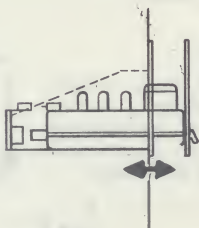
QUICK REPLACEMENT — Plug-in replacement spares minimize downtime to 30 seconds. Malfunctioning unit quickly ejected . . . replacement unit quickly locked-in by simple twist of the fingers.



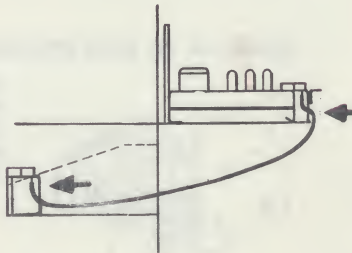
IN-SERVICE CHECK — Chassis can be brought out into open as a functioning unit complete with all circuit identification. Open-sided Alden Chassis provides easy accessibility for circuit checks.



Tiny Alden Pan-i-Lites, Push-button Switches, and Indicating Fuse-lights mount quickly — take very little space on front panel . . . pin point defective circuits instantly.



Modular chassis in various sizes can be quickly locked-in or ejected by 1/2 turn of Serve-A-Unit Lock handles.

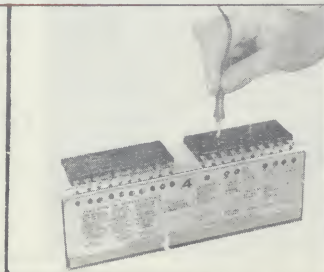


Alden Adapter Cable plugs into Back Connectors in equipment and on rear of chassis. Permits operation of chassis outside of equipment for checking.

SIMPLIFIED SERVICING . . .



Malfunctioning unit shipped safely and quickly to repair center — repaired and returned as replacement spare.



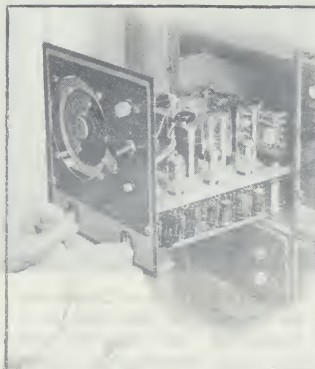
Alden Back Connectors bring all in/out leads to one point-of-check . . . makes possible graphic, color-coded circuit legends.



Accessibility of snap-out circuit modules permits rapid location and quick replacement of repair of malfunction.

ALDEN BASIC CHASSIS . . .

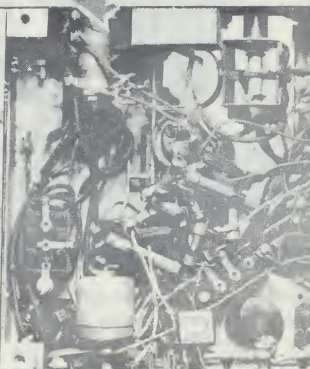
. . . the key to plug-in unit construction



A twist of the fingers and cam-operated Serve-A-Unit Lock guides in, locks or ejects chassis in practically any application.

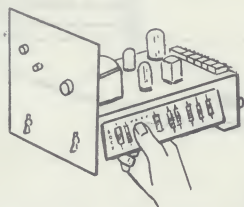


Modular terminal card sub-chassis mount in vertical planes in basic chassis, making a neat and accessible assembly . . . a servicing dream!



Conventional box chassis and point-to-point wiring — an inaccessible rat's nest assembly — a servicing nightmare!

FEATURES OF THE ALDEN OPEN-SIDED CHASSIS . . .



Open-sided design permits fast accessibility — fast replacement of card-mounted sub-chassis . . . permits more efficient air circulation.



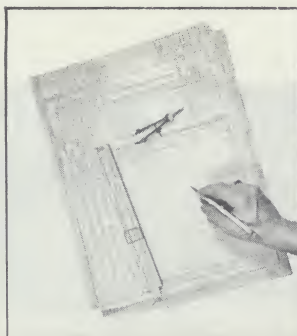
Terminal cards with top-mounted sockets can be mounted by tracks which snap into clips mounted on chassis feet — sockets positioned in respective chassis holes hold cards securely.

Cards can also be mounted by eyeleting to sockets which in turn fasten to chassis as turrets.

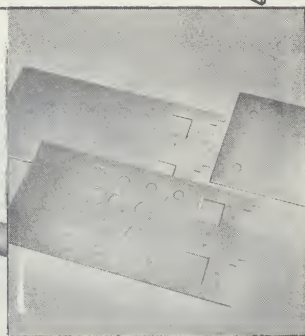


Where chassis mounting sockets are not used, brackets with matching holes are used to mount cards to chassis.

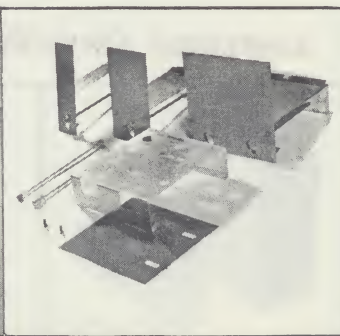
EASY LAYOUT — FAST SERVICE . . .



Indicate various hole centers and sizes on Alden full-scale chassis planning sheets. Mail to Alden Products Company.



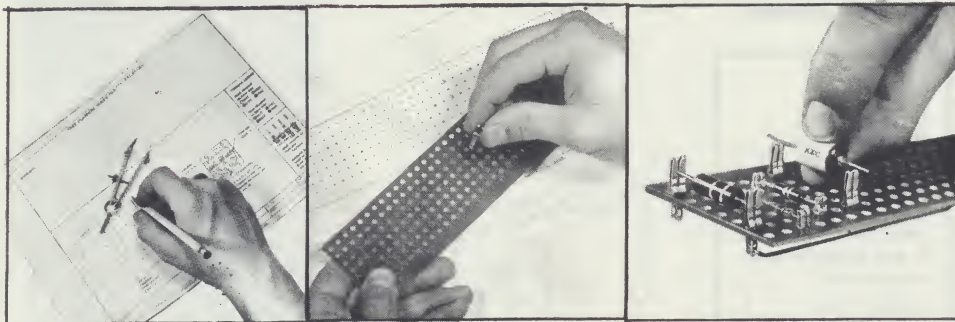
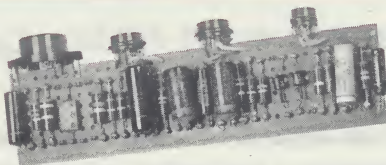
Alden Basic Chassis and Front Panels are stored in the flat — pre-shaped, ready for punching to your specifications.



Punched and shaped chassis are shipped within 24 hours, ready for your circuitry and components.

ALDEN TERMINAL CARD MOUNTING SYSTEM

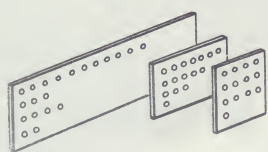
... rapid, efficient build-up
from schematic
to circuitry!



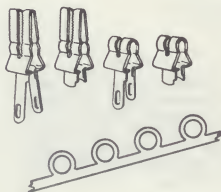
Lay out your circuitry on Alden full-scale terminal card planning sheets.

Snap-in terminals at designated points... for permanent mounting, simply swage in.

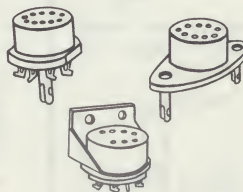
Snap component leads into ratchet jaws of terminals... they're held securely — ready for fast soldering, if necessary.



Pre-punched phenolic terminal boards are available off-the-shelf in various sizes for practically any circuit combinations.

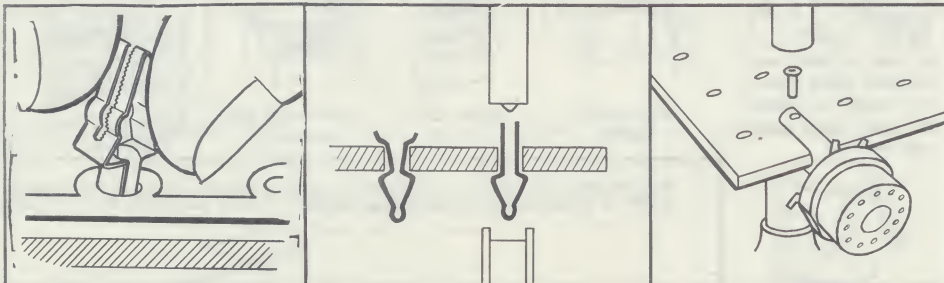


Unique Alden Ratchet Terminals hold component leads securely — no twisting around a post — jumper strip eliminates unnecessary wiring of common circuits.



Alden card-mounting tube sockets integrate tubes and circuitry into single, compact planes... mount simply and securely by eyelet.

Simple, Reliable Circuit Techniques...



Use jumper strip in place of bulky insulated leads... tabs match pre-punched holes in card. Simply stake-in under terminals.

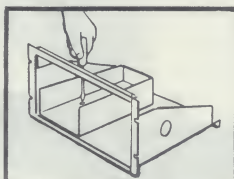
Swage terminals in securely using simple punch and anvil. Use hand tool or automatic machines for prototype or production runs.

Eyelet brackets and sockets in pre-punched holes using standard eyeletting techniques for prototype or production runs.

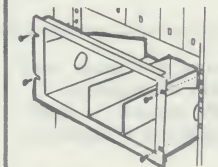
THE IDEAL WAY TO PACKAGE "BUILDING-BLOCK" SUB-ASSEMBLIES.

By fully utilizing all the features of Plug-in Unit Construction the Uni-Rack becomes a more functional, convenient and serviceable unit than conventional assemblies.

Alden
Uni-Racks



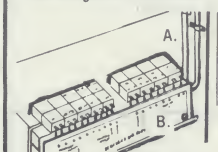
Chassis cases mount easily in Rack Adapter to accommodate chassis.



Completed Rack Adapter mounts in standard rack by 4 screws.



Modular chassis plug into rack mounted adapter as "building block" functions.



All leads and cables easily accessible. Ample room in side channel for cabling. All in/out leads graphically identified.



Finished equipment can be mobile — ready to roll in, plug in for immediate operation.

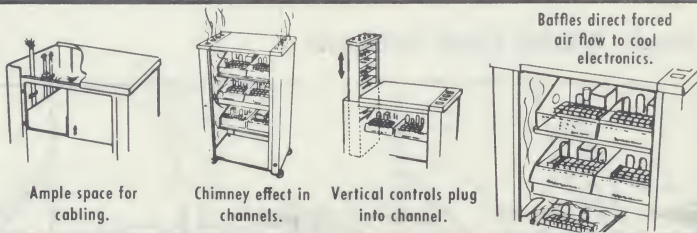
Rack Adapter

Alden
Basic Chassis

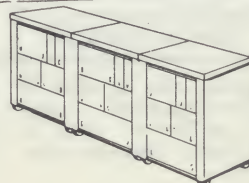
Alden Basic Chassis mount in any combination to become true "building blocks" in the "picture frame" rack adapter. This functionally sub-divided rack module can be included in line with other rack mounted units making up electronic systems.

New picture frame design keeps front panels neatly aligned — provides a more rigid support.

The Alden Rack Adapter mounts in any standard relay rack or specifically in **Alden Uni-Racks** for greater flexibility and servicing ease.



The Uni-Rack is modular — available in various heights and multiples of basic width in either mobile or stationary models — easily accessible front or rear.

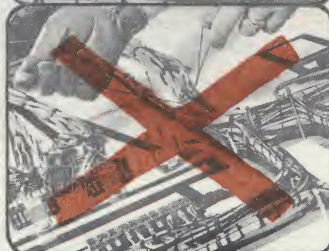


YOU CAN AVOID THE HIGH COST OF LACED CABLES
with this new, simplified wiring system

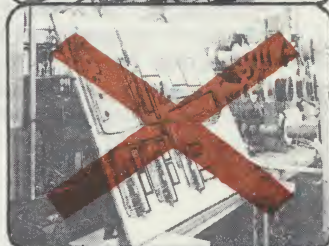
YOU CAN AVOID production delays and rejected cables because one lead is damaged or malfunctioning after the cable is laced.



YOU CAN ELIMINATE the expense of skilled workers required to dress and lace and strip leads.



YOU CAN REDUCE the space and complicated setups required by harness boards.



YOU CAN SOLVE the high cost of servicing equipment in the field? Can the user of your equipment afford the downtime.



IF YOU HAVE THESE PROBLEMS
AND WANT TO SOLVE THEM QUICKLY . . .

Join the modern trend to simplicity with the
Alden Interchassis Connecting System.



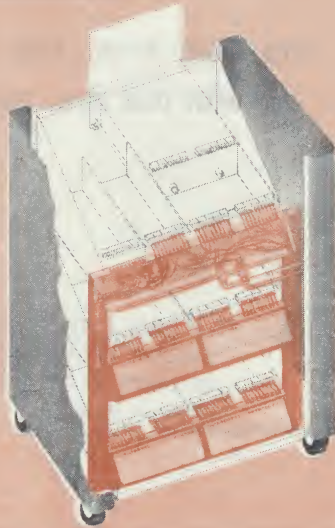
ALDEN PRODUCTS COMPANY

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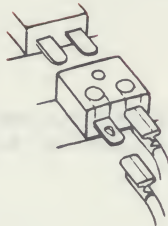
Unitized, metal channels neatly enclose all wiring and provide shielding and protection from many contaminants. Pre-cut leads with contacts on each end are automatically organized in channel slots for fast, simple connections to Back Connectors by unskilled workers.

These color-coded leads with push-fit contacts for solderless connections can be stocked in standard, non-critical lengths for quick connections or disconnections between any two Back Connector tabs.

For permanent setups and maximum reliability leads can be encapsulated in channels and contacts can be easily soldered to Back Connector tabs.



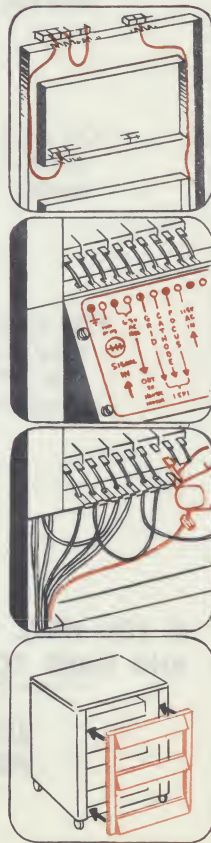
IN SERVICING—Point-of-Check at back plates can present all **pertinent circuit function and test data** in numbers, symbols and color coding for use **anywhere in the world**.



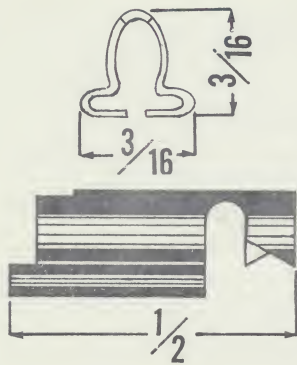
Because each input/output lead is made clear pictorially it becomes easy for **personnel with minimum training** to trace, test and repair malfunctions.

Removable channel covers provide **easy access to wiring**; push-on contacts provide unique **flexibility for replacement or repair**.

Completely assembled interchassis connecting systems can be **shipped intact** ready for **fast, simple installation** in the field even by non-technical personnel.



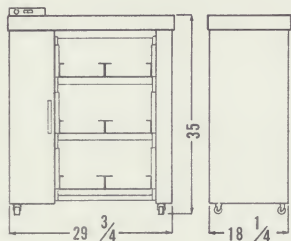
462MINT PUSH-ON TERMINALS FOR MINIATURE BACK CONNECTORS



Wiring cable assemblies are easily fabricated as separate units and pushed onto Miniature Back Connector contacts. The ability to make or break one connection at a time makes this terminal unique and saves service time when changes are necessary. Interchassis wiring can now be made more reliable and servicable through the use of Alden Push-on Terminals.

Contact material is tinned brass and will accommodate wires up to $3/32$ " diameter.

11,030CA ALDEN CONSOLE



The new Alden Console is a mobile unit providing three levels for multiples of chassis as desired. A sturdy pull-out shelf provides space for servicing and the storage compartment at the side holds spare parts or tools. A shelf is standard in the storage area. The sturdy construction is of $1/16$ cold rolled steel, finished in Alden precision gray baked enamel. Shipped assembled ready for use.

For the greatest convenience order 11,030-CHA, which provides the standard console plus the "New Alden Inter-Chassis Connecting System." The Alden unitized wiring channels neatly enclose all connecting leads and provide shielding. The push-on terminals which mate with Alden back connectors eliminate the need for tedious time-consuming soldering. Cable lacing is no longer required.

ALDEN PRODUCTS COMPANY $\frac{1H-1}{PI}$

ALDEN 2", 4" & 8" BASIC CHASSIS

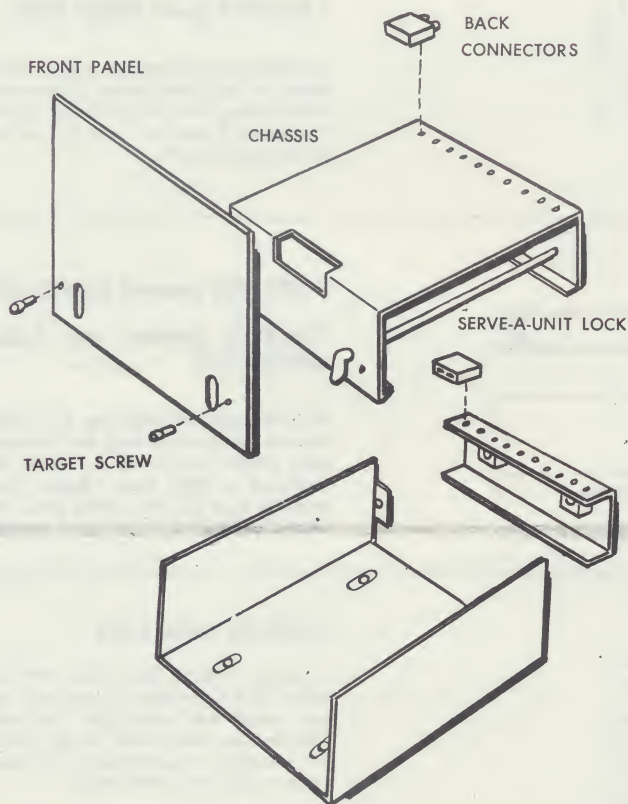
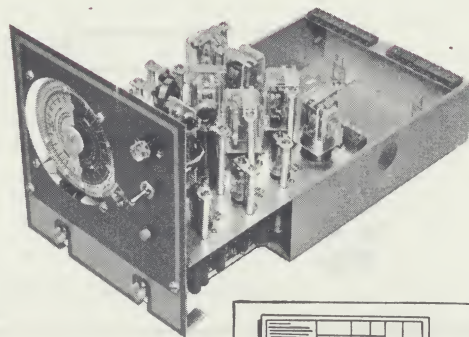
Key your equipment design to the Alden Basic Chassis and open the door to the only complete system of building block packaging components.

IN PROTOTYPE . . . the Alden Basic Chassis system organizes your circuitry by functions into plug-in "building blocks" — automatically forces separation of circuits into logical sub-assemblies.

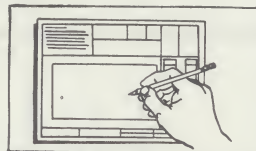
IN MANUFACTURING . . . sub-assembly techniques are ideally suited to high velocity assembly methods — eliminating production bottlenecks.

IN OPERATION . . . electronic functions have instant accessibility and fast, simple replacement, with quick, positive cam lock and open-sided construction.

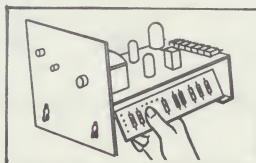
Design and package your equipment using this faster, easier method — it's as simple as this . . .



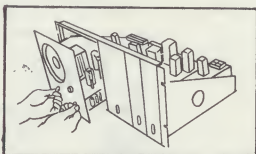
The component parts of the Alden 2", 4", 8" BASIC CHASSIS assembly (illustrated here by the 8" chassis) assemble in the same manner and are described on the following pages.



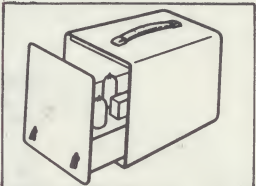
For punched chassis and front panels to your specs indicate hole sizes and centers on full-sized chassis and front panel planning sheets. (We provide them.)



Snap in terminal card circuitry in vertical planes and mount components on chassis and front panel.

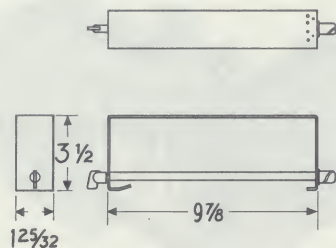


Completed chassis is then plugged into Rack Adapter and included in Alden Uni-Rack or standard relay rack.



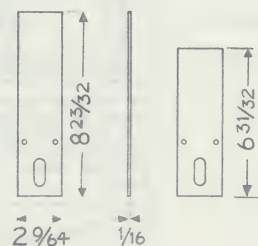
Chassis plug securely into instrument cases as portable equipment or for shipment as replacement unit.

11002-1 BASIC CHASSIS (2" Width)



Assembly includes one cam operating Serve-A-Unit Lock which locks in or ejects from back plate. Holes are punched for the two miniature Alden Back Connectors (4 contacts). Basic Chassis is open-sided construction, cadmium plated, $\frac{1}{16}$ " cold rolled steel. Weld nuts are provided for fastening front panel.

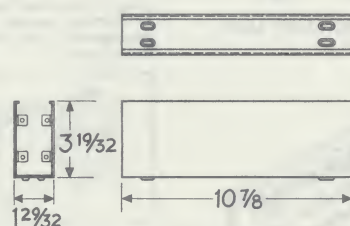
11002-1A is the same chassis, with the Alden Basic Connectors eyeleted in place.



11002-PF7-4A FRONT PANEL

11002-PF8-3/4-4A FRONT PANEL

Available in two standard heights which fasten to the Alden Basic Chassis with two stainless steel Alden Target Screws (included). Clearance hole is punched for cam lock handle.



11002-5VA (vented) CHASSIS CASE

11002-5A (without vent holes) CHASSIS CASE

Provides slide-in enclosure for Alden Chassis. Brackets on end for fastening back plate; four holes in bottom for fastening to Alden Rack Adapter. Construction is of $\frac{1}{32}$ " cold rolled steel. Finished in baked precision gray enamel.



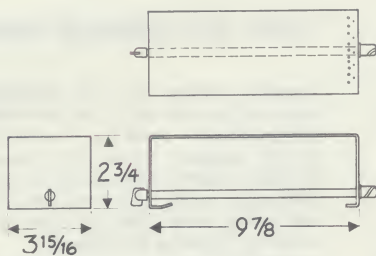
11002-3A BACK PLATE

Assembly includes Back Plate with two Alden Back Connectors (4 contacts), one cam socket for Serve-A-Unit Lock and four stainless steel Alden Target Screws for mounting. Construction is $\frac{1}{16}$ " cadmium plated cold rolled steel.

11002-3 BACK PLATE

Same as 11002-3A, but without Alden Back Connectors.

11004-1 BASIC CHASSIS (4" Width)

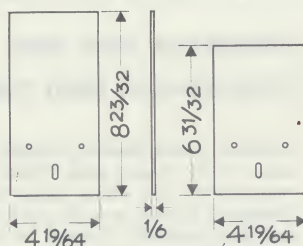


Assembly includes one cam operating Serve-A-Unit Lock which locks in or ejects from back plate. Holes are punched for the five Alden Miniature Back Connectors (10 contacts). Basic Chassis is open-sided construction, cadmium plated, $\frac{1}{16}$ " cold rolled steel. Weld nuts are provided for fastening front panel.

11004-1 A is the same chassis with the 5 male Alden Back Connectors eyeleted in place.

11004-PF7-4A FRONT PANEL

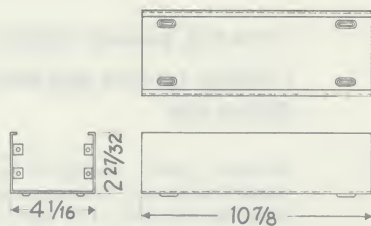
11004-PF8-3/4-4A FRONT PANEL



Available in two standard heights which fasten to the Alden Basic Chassis with two stainless steel Alden Target Screws (included). Clearance hole punched for cam lock handle constructed of $\frac{1}{16}$ " cold rolled steel finished in baked precision gray enamel.

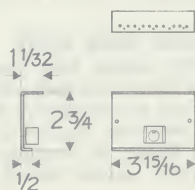
11004-5VA (vented) CHASSIS CASE

11004-5A (without vent holes) CHASSIS CASE



Provides slide-in enclosure for the Alden Basic Chassis. Brackets on end for fastening Back Plate; four holes in bottom for fastening to Alden Rack Adapter. Construction is of $\frac{1}{32}$ " cold rolled steel finished in baked precision gray enamel.

11004-3A BACK PLATE

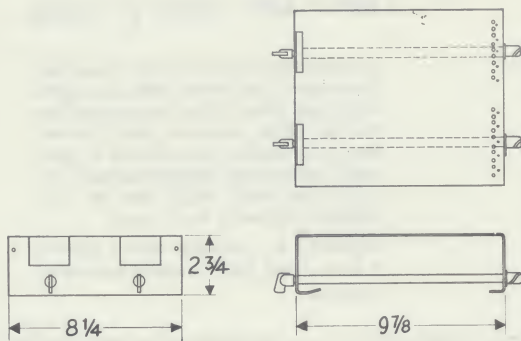


Assembly includes Back Plate with five female Alden Back Connectors (10 contacts), one cam socket for a Serve-A-Unit Lock and two stainless steel Alden Target Screws for mounting. Construction is $\frac{1}{16}$ " cadmium plated cold rolled steel.

11004-3

Same as 11004-3A, but without Alden Back Connectors.

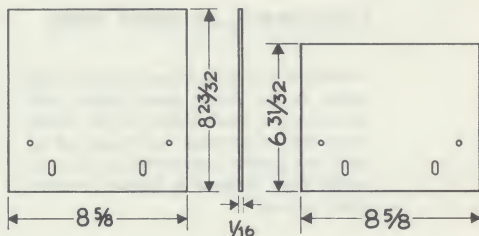
ALDEN 8" BASIC CHASSIS



11008-1 BASIC CHASSIS (8" Width)

Assembly includes two cam operating Serve-A-Unit Locks which lock in or eject from back plate. Holes are punched for the ten miniature Alden Back Connectors (20 contacts). Basic Chassis is open-sided construction, cadmium plated, $\frac{1}{16}$ " cold rolled steel. Weld nuts are provided for fastening front panel.

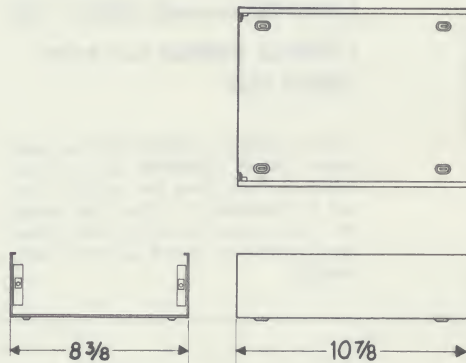
11008-1A is the same chassis with the male Alden Back Connectors eyeleted in place.



11008-PF7-4A FRONT PANEL

11008-PF8-3/4-4A FRONT PANEL

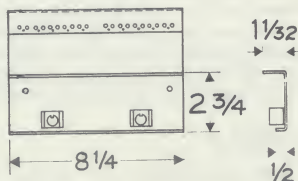
Available in two standard heights which fasten to the Alden Basic Chassis with two stainless steel Alden Target Screws (included). Clearance holes punched for cam lock handles. Finished in baked precision gray enamel.



11008-5VA (vented) CHASSIS CASE

11008-5A (without vent holes) CHASSIS CASE

Provides slide-in enclosure for the Alden Basic Chassis. Brackets on end for fastening back plate; four holes in bottom for fastening to Alden Rack Adapter. Construction is of $\frac{1}{32}$ " cold rolled steel finished in baked precision gray enamel.



11008-3A BACK PLATE

Assembly includes Back Plate with ten female Alden Back Connectors (20 contacts), two cam sockets for Serve-A-Unit Locks, and two stainless steel Alden Target Screws for mounting. Construction is $\frac{1}{16}$ " cadmium plated cold rolled steel.

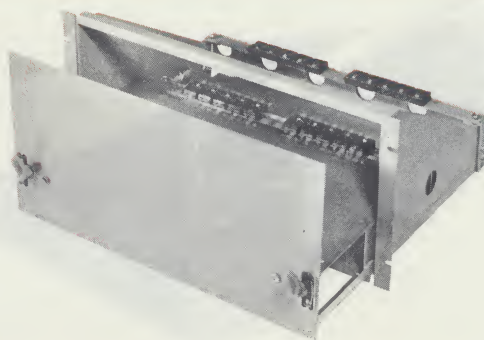
11008-3 BACK PLATE

Same as 11008-3A, but without Alden Back Connectors.

ALDEN 17" BASIC CHASSIS

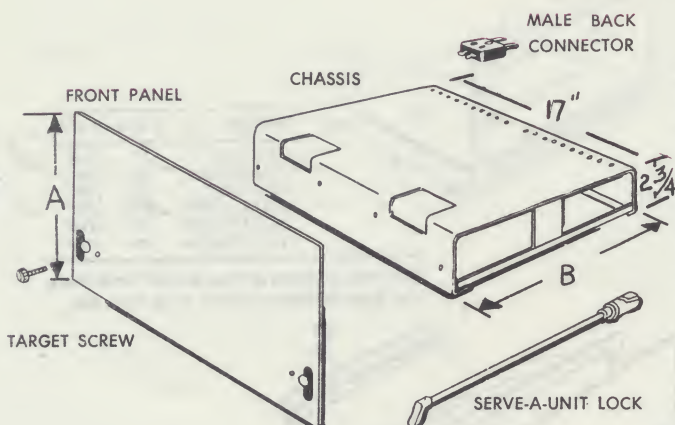
SPECIFICATIONS

Alden's 17" Basic Chassis unit is made for heavy duty electronic packaging with lighter chassis units in the same equipment. Chassis is open-sided, plug-in construction with accessibility from back or front. Ideally suited for housing heavy duty transformers or power units without special packaging.



ALDEN 17" BASIC CHASSIS

SPECIFICATIONS



Basic Chassis

The Alden 17" Basic Chassis is ideal for heavy duty electronic components that require a solid mounting chassis. This 17" Basic Chassis plugs into the Alden 19" Chassis Rack Adapter. Rack has a heavy duty lock frame with ten large female back connectors (20 contacts). Chassis front panel is available in 7", 8 3/4" or 10 1/2" height. Two heavy duty Serve-A-Unit Locks lock or eject the chassis with one half turn.

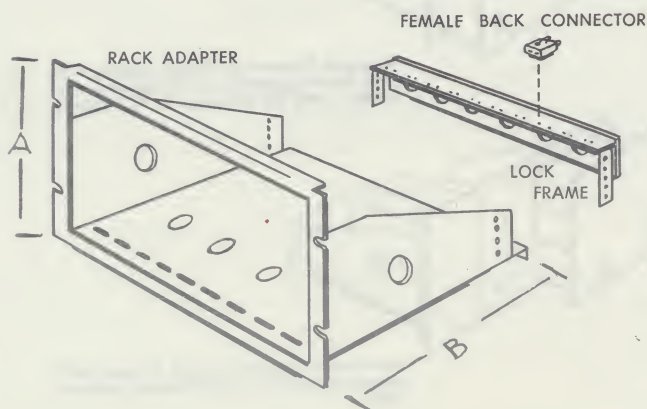
Part No.	A Dim.	B Dim.
11117-8-3/4L-1A	8 3/4"	13"
11117-8-3/4S-1A	8 3/4"	10 1/2"
11117-7L-1A	7"	13"
11117-7S-1A	7"	10 1/2"
11117-10-1/2S-1A	10 1/2"	10 1/2"
11117-10-1/2L-1A	10 1/2"	13"

RACK ADAPTER WITH LOCK FRAME

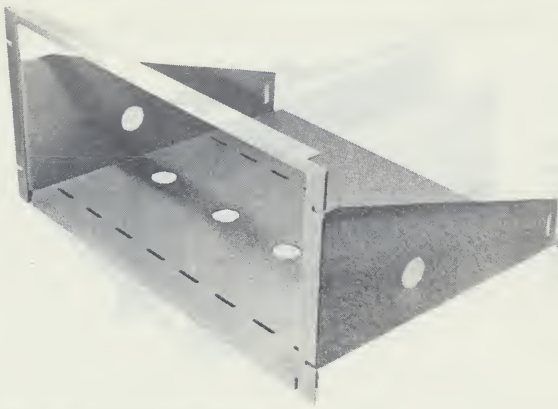
Basic chassis plugs into the standard picture-frame rack adapter which has a lock frame with ten large female back connectors (20 contacts). This rack adapter which is adapted for the heavy duty chassis comes in standard heights to fit 7", 8 3/4" or 10 1/2" front panels snugly.

Chassis front panels and rack adapters are finished in baked precision grey enamel.

Part No.	A Dim.	B Dim.
11117-7SRA-LFA	7"	12 1/4"
11117-7LRA-LFA	7"	14 3/4"
11117-8-3/4LRA-LFA	8 3/4"	14 3/4"
11117-8-3/4SRA-LFA	8 3/4"	12 1/4"
11117-10-1/2SRA-LFA	10 1/2"	12 1/4"
11117-10-1/2LRA-LFA	10 1/2"	14 3/4"

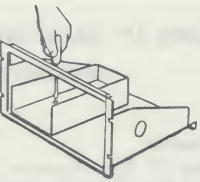


ALDEN CHASSIS RACK ADAPTERS

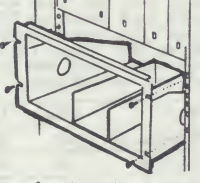


New Picture-Frame Rack Adapter design provides a more rigid support and a better appearance to front panels. This functionally sub-divided rack module can be included in line with other rack-mounted units making up electronic systems.

It mounts in any standard relay rack or specifically in Alden Uni-Racks. The Alden Rack Adapter makes it simple to rack mount your Basic Chassis. 19" Rack Adapter takes combinations of 2", 4" and 8" chassis in combinations or one 17" chassis for heavy duty electronics.



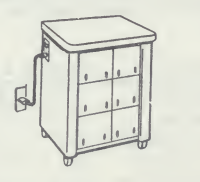
1-Chassis cases mount easily in rack adapter to accommodate chassis.



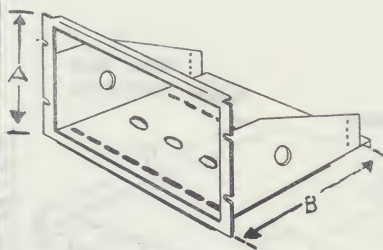
2-Completed rack mounts in Uni-Rack with 4 target screws.



3-Modular chassis plug into rack-mounted adapter as plug-in functions.

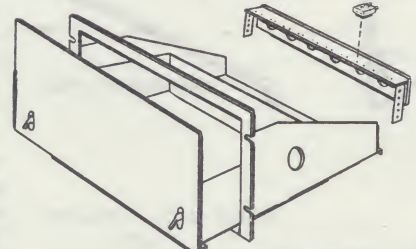


4-Finished equipment is mobile - ready to roll in, plug in for immediate operation.

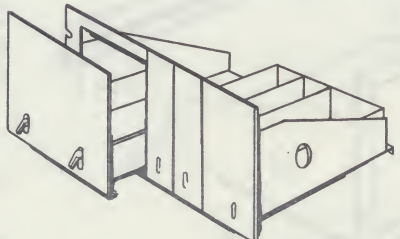


PART NO.	A DIM.	B DIM.
11117-7SRA*	7"	12 1/4"
11117-8-3/4SRA*	8 3/4"	12 1/4"
11117-7LRA†	7"	14 3/4"
11117-8-3/4LRA†	8 3/4"	14 3/4"
11117-10 1/2 SRA*	10 1/2"	12 1/4"
11117-10 1/2 LRA†	10 1/2"	14 3/4"

*For Alden Uni-Racks of 13 1/4" or 15 1/2" inside depth.
†For Alden Uni-Racks of 15 1/2" inside depth only.



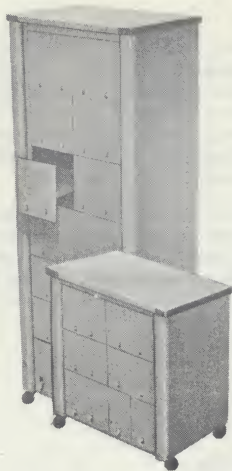
Standard Picture-Frame Rack Adapter with Lock Frame assembly and large back connectors used for plugging in 17" chassis.



Standard Picture-Frame Rack Adapter with chassis cases for 2"-4"-8" chassis combinations.

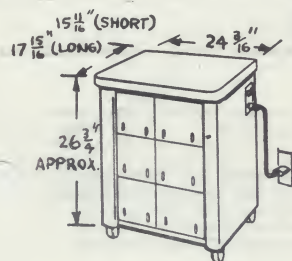
ALDEN UNI-RACKS

See pages, over



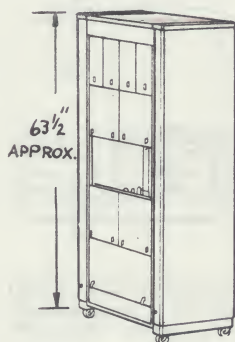
The Alden Uni-Rack provides the ideal way to package your "Building Block" sub-assemblies.

By fully utilizing all the features of plug-in unit construction, Uni-Racks are more compact, convenient and serviceable unit than conventional assemblies. The Alden Uni-Rack, is available in two basic heights — in either mobile or stationary models — easily accessible from either front or rear. Hollow side channels provide ample room for cabling and have a natural chimney effect for rapid heat dissipation. Adjustable height adjusts overall height of Uni-Rack.



ALDEN LOW MODEL UNI-RACK

The low model Uni-Rack is ideal for on-the-spot mobile controls, may be stationary under benches; for test setups in labs or on production lines to house process controls. Low model holds three rack adapters to mount multiples of chassis as desired. Uni-Rack is available singly or in multiples. Shipped knocked down, can be assembled in minutes. Construction is of $\frac{1}{16}$ " cold rolled steel and finished in precision grey enamel.



ALDEN HIGH MODEL UNI-RACK

The high model Uni-Rack offers many of the same conveniences, but makes available more cabinet space. This high model may be used in multiples, mobile or stationary. Accommodates seven rack adapters for housing chassis configurations. Rugged steel construction, precision grey enamel finish. Shipped knocked down, can be assembled in minutes.

NOTE: With three-piece top cover, side channels may be used to house vertical controls — utilizing the same plug-in principle for connecting in/out leads.

WITH ONE-PIECE TOP COVER

Part No.	Panel Height	Inside Depth
11,024 SURL	24 1/2"	13 1/4"
11,024 LURL	24 1/2"	15 1/2"
11,060 SURL	61 1/4"	13 1/4"
11,060 LURL	61 1/4"	15 1/2"

WITH THREE-PIECE COVER

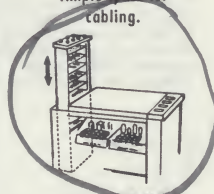
Part No.	Panel Height	Inside Depth
11,024-3T-SURL	24 1/2"	13 1/4"
11,024-3T-LURL	24 1/2"	15 1/2"
11,060-3T-SURL	61 1/4"	13 1/4"
11,060-3T-LURL	61 1/4"	15 1/2"

To order Uni-Rack with casters assembled, add "C" to above part numbers.

ALDEN PRODUCTS COMPANY



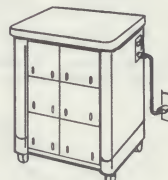
Ample space for cabling.



Chimney effect in channels.



Baffles direct forced air flow to cool electronics.



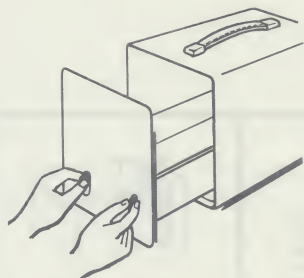
The Uni-Rack is modular — available in various heights

INSTRUMENT CASES

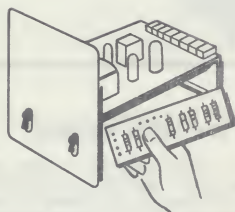


Design your instruments in these pre-engineered, prefabricated cases . . . they will be more reliable, more easily serviced units — saving many hours of engineering and construction time. These new designs make it possible to apply the advantages of plug-in construction to smaller portable electronics gear.

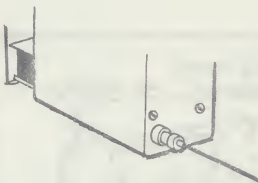
From the exterior, cases follow contemporary trends in advanced styling with functional recessed front panel to protect dials, indicating lights, switches, etc. . . . but from that point on, all resemblance to standard cases ends!



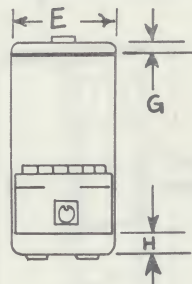
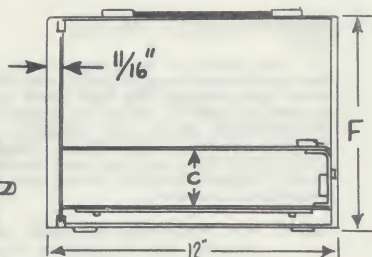
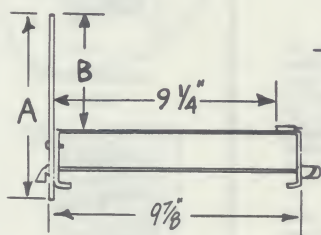
When malfunctions occur in the circuits . . . a simple half turn of the Serve-A-Unit Lock handle disconnects the entire electronic chassis. This slides out to expose the open-sided chassis.



Circuitry is mounted on pre-punched terminal cards which snap in and out of the open-sided chassis.

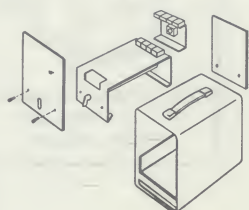


Power inputs can be included in the rear, convenient and out of the way. Both front and rear panels are hooded so that visible instruments are protected.



SPECIFICATIONS

Description	Part No.	Wt.	A	B	C	D	E	F	G	H	No contacts*
2" Inst. Case	11002-8 3/4 CCA	5 lbs.	8 3/4	4 5/8	3 1/2	1 1/16	2 1/4	9"		1/2	4
4" Inst. Case	11004-8 3/4 CCA	9.5 lbs.	8 3/4	5 3/8	2 3/4	4"	4 5/8	10"	1/2	1/2	10
8" Inst. Case	11008-8 3/4 CCA	14.5 lbs.	8 3/4	5 3/8	2 3/4	8 5/8	8 1/16	10"	1/2	1/2	20



*If more contacts are needed, additional back connectors can be stacked.

The Alden "off-the-shelf" instrument cases are made for 2"—4"—8" chassis. Constructed of cold rolled steel .062 and finished in baked grey enamel with rubber feet and a leather handle.

48

hour hole punching and silk screen service

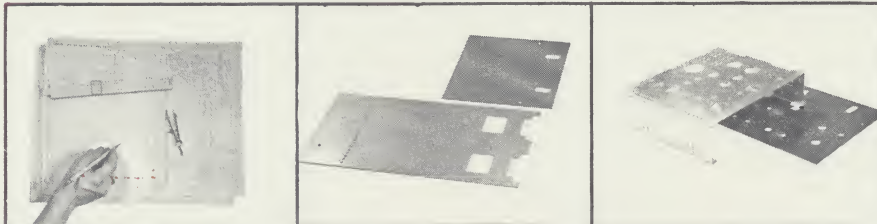
... for Alden Chassis and Front Panels

FAST TURN AROUND DELIVERY

Off the shelf Alden Chassis and Front Panels in 2", 4", 8" and 17" widths await your specifications. To lay out your requirements use full scale Alden planning sheets for Chassis and Front Panels either from your Alden Handbook or in quantities from our Customers' Department.

Lay out your hole sizes and locations and mail the planning sheets to us. This same planning sheet will be the basis for a template to process one or one hundred Chassis.

While pre-fabricated chassis are being punched, and silk screened to your specifications — you may be pre-assembling circuitry on terminal boards — ready to snap in when your chassis arrives.



Indicate hole sizes and locations on these full scale planning sheets. These sheets are used as templates for punching to your specifications.

Pre-fabricated chassis and front panels as seen before punching and screening.

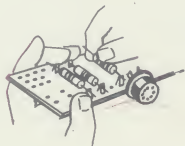
Chassis and front panel punched, shaped, and ready for screening — then shipment.

Many designers who use plug-in unit construction techniques plan their assembly work so that individual modules are in a build up stage before chassis arrives. Modular units easily snap in or bracket mount.

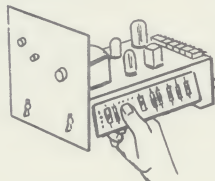
Your finished chassis is shipped punched, painted and screened with any other components mounted as specified.

Front panels, chassis, racks may be silk screened with numbers, symbols, words, etc. Art work and type (unless specified) will require additional charge. There is a basic charge for each screen. Art work must be supplied as black letters, symbols, etc. on a white surface, to scale, and positioned same size.

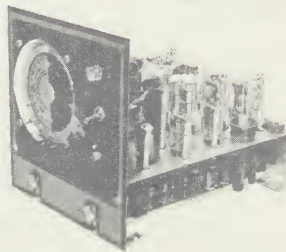
NOTE: Additional Alden components used to mount, house, fasten, monitor and connect circuitry may be ordered at the same time.



Components snap securely into ratchet jawed terminals to make up finished terminal card modules.



Terminal card modules snap in when chassis arrives.



ALDEN PRODUCTS COMPANY No. Main St., Brockton, Mass.

**2K
PI**

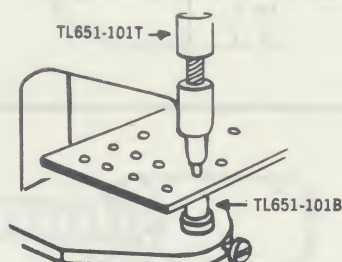
Alden's all-in-one universal staking tool makes it possible for you to quickly build complete resistor board modules. Interchangeable heads and anvils punch holes, eyelet hardware and swage terminals. This universal tool makes breadboarding and prototype work possible with a degree of simplicity using only a small corner of your desk. The Alden Terminal Card Mounting System utilizes this tool in every circuit or resistor board that you build.

complete
staking tool
TL651 k



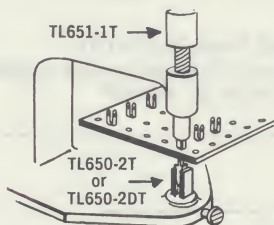
PUNCHING HOLES

Blank phenolic cards or similar material may be punched by inserting the **TL651-101T** hole punch through the bearing. Then insert **TL651-101B** anvil into bottom hole and tighten Alden Target Screw. Standard hole size .101 for Alden terminals.



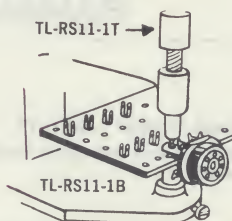
SWAGING TERMINALS

Swaging in Alden ratchet jawed terminals is done by inserting the **TL651-1T** terminal punch and the **TL650-2T** terminal anvil or the **TL650-2DT** diode terminal anvil which has smaller jaws. This simple process secures terminals that will hold all components securely.

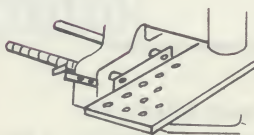


EYELETTING— RIVETING

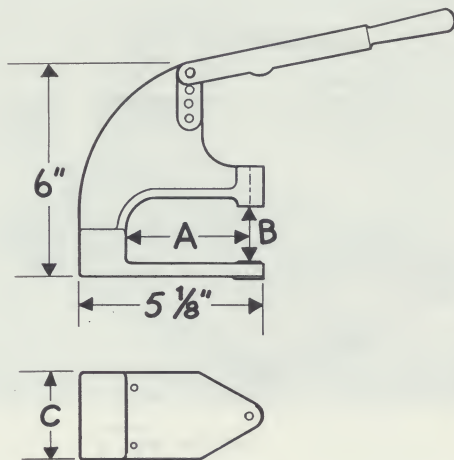
Smaller terminal card hardware may be eyeleted into place by inserting the **TLRS11-1T** eyelet punch and the **TLRS11-1B** anvil. Crimping is done by inserting eyelet through and placing in position for tool head to come down solidly onto eyelet end.



An extra feature of this completely unique tool is an adjustable guide for punching holes in unpunched phenolic cards or similar material. Guide is snapped into position behind the anvil and allows you to evenly punch holes in rows. **#TL651GA.**



SPECIFICATIONS



The basic staking tool is cast in aluminum. The basic casting may be purchased without the mounting board for a specific mounting or adaptation of your choice. Casting has a self-oiling bronze bearing through which the interchangeable tools work after insertion. Interchangeable anvils locate in hole beneath and are firmly set by tightening up on Alden Target Screw.

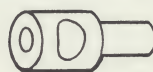
Dimensions are as follows:

Throat depth $3\frac{1}{2}$ " (dim. A)
Throat height $1\frac{1}{16}$ " (dim. B)
Width $2\frac{3}{8}$ " (dim. C)
Height 6"
There are two $\frac{3}{16}$ " mounting holes in the casting for mounting.



Hole Punch TL651-101T

Punches .101 holes in tough glass-filled phenolic or similar $\frac{1}{16}$ " material.



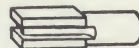
Hole Anvil TL651-101B

Mates with hole punch to make .101 diameter holes.



TL650-2DT

TL650-2T



Terminal Swager TL651-1T

Swages terminals after they have been inserted into holes.

Terminal Anvil TL650-2T

Terminal Anvil (diode) TL650-2DT

Anvil mates with swaging head to hold terminal after it has been placed into the card.



Eyelet Punch TLR511-1T

Crimps eyelet end over after it has been inserted through both terminal card and component.

Eyeletting Anvil TLR511-1B

Holds head of eyelet securely while it is being crimped.

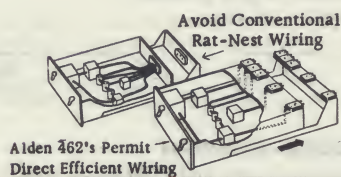
462 SERIES

Here are the back connectors that are mounted as individual units across the back of the chassis to provide the most direct efficient circuitry wiring...and that bring out leads for instant identification and check. They make possible the design of modern plug in, slide in, units that go together and come apart easily.

Generous bell mouthed entries and floating clip action provide wide mating tolerance to do away with critical alignment problems. Color coding permanently identifies each lead for easy check and service.

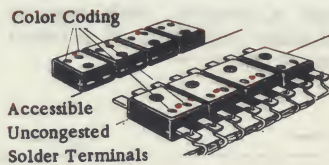


DESIGN FEATURES



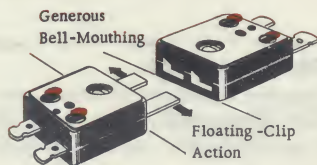
EFFICIENT CIRCUIT WIRING

Connectors can be mounted where desired - to allow for isolation of critical voltages or frequencies - to provide most direct wiring from component to connector - to eliminate rat-nest wiring of conventional methods.



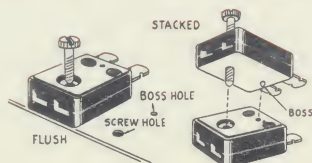
EASY SERVICING and RAPID CIRCUIT CHECKS

Solder terminals easily accessible and uncongested for multiple contact wiring. Color-coding on back connector, corresponding to lead color, identifies each lead for instantaneous check to main circuit or trunk line.



EASY INSERTION AND REMOVAL

Made possible by large bell-mouth entries and ample float of rugged contacts. Wide mating tolerances eliminate critical unit alignment problems.



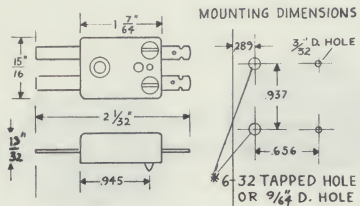
EASY MOUNTING

Single screw for mounting flush or stacked. Molded locating boss positions and locks connector in place on unit when flush mounted - boss accurately lines up and positions connectors together in stack mounting.

ALDEN PRODUCTS COMPANY

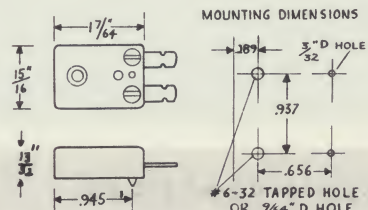
3A
PI

SPECIFICATIONS



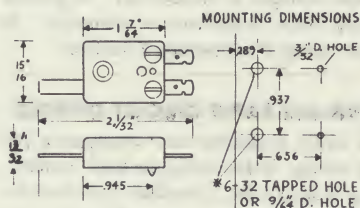
MALE 462MS

FLOATING-CLIP ACTION, wide-mating tolerances.
 COLOR-CODING for instant lead identification.
 ACCESSIBLE SOLDER-TERMINALS for easy wiring and servicing.
 MOLDED BOSS for positioning in flush or stack mounting.
 MATERIAL - molded in grey phenolic.
 CONTACT RATING - 20 amps.



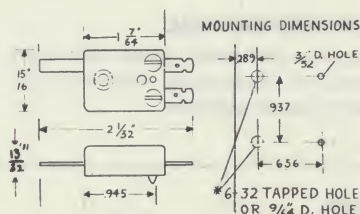
FEMALE 462FS

GENEROUS BELL-MOUTH ENTRIES - wide-mating tolerances.
 COLOR-CODING for instant lead identification.
 ACCESSIBLE SOLDER-TERMINALS for easy wiring and servicing.
 MOLDED BOSS for positioning in flush or stack mounting.
 MATERIAL - molded in grey phenolic.
 CONTACT RATING - 20 amps.



HERMAPHRODITE 462MSRH

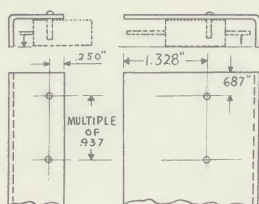
Alden Back Connector with solder terminals projecting from back of connector. Male prong in right-hand front pocket, female clip in left-hand front pocket. (Front view)



HERMAPHRODITE 462MSLH

Alden Back Connector with solder terminals projecting from back of connector. Male prong in left-hand front pocket, female clip in right-hand front pocket. (Front view)

SPECIFICATIONS

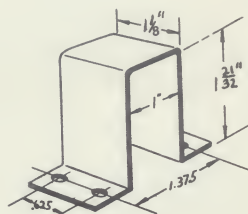


LUCITE GUARD 9009-4-412

Where it is desired to protect the exposed contacts of the back connectors, the Alden Lucite Guard is available.

TO ORDER

Specify the Number of Back Connectors to be Mounted Side by Side.



STACKING STRAP 462S-4 *

When stacking more than three back connectors, the Alden Stacking Strap can be provided as shown. This strap accommodates a stack of four back connectors. *Add number of back connectors to be stacked after part number.

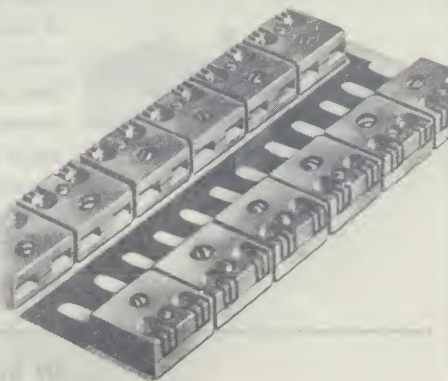
MINIATURE BACK CONNECTORS

462MIN SERIES

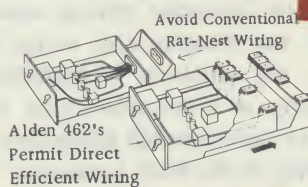
Alden Miniature Back Connectors are units that can be individually positioned on the back of chassis - isolating lines with incompatible voltages, current, or frequencies.

Design insures you accessible terminals for easy soldering and avoids rat nest of congested conventional back connector wiring. Leads can be attached from above, below or out of the back for the most direct efficient interconnects.

Wide mating tolerances compensate for sheet metal variations in chassis; therefore eliminate critical alignment problems and permit easy insertion and removal. Color coding instantly identifies leads for rapid circuit checks.

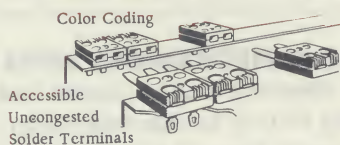


DESIGN FEATURES



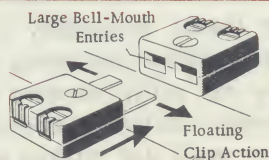
EFFICIENT CIRCUIT WIRING

Miniature connectors mounted where desired, allow for isolation of critical voltage or frequency - provide most direct wiring from component to connector - eliminate rat-nest wiring of conventional methods.



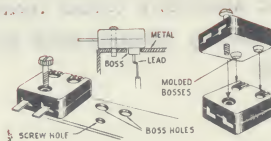
EASY SERVICING and RAPID CIRCUIT CHECKS

Solder terminals easily accessible and uncongested for multiple contact wiring. Bands of color, corresponding to lead color, permanently identify leads for easy check to main circuit or trunk line.



EASY INSERTION AND REMOVAL

Made possible by large bell-mouth entries and ample float of rugged contacts. Wide mating tolerances eliminate critical unit alignment problems.

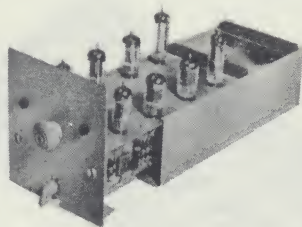


EASY MOUNTING

Single screw for mounting. Molded bosses position connectors accurately for flush or stack mounting and insulate solder terminals when brought through chassis.

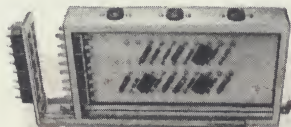
ALDEN PRODUCTS COMPANY ^{3D}/_{PI}

IN MINIATURE CHASSIS



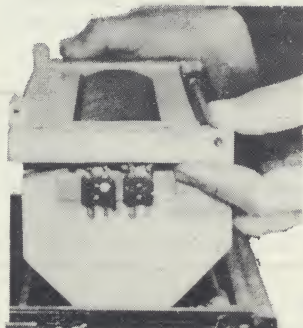
Here are the miniature back connectors in use on a small slide-in chassis used in experimental work. This unit must go together and come apart easily. Numerous contacts must be carried to rack with adequate insulation, yet wiring must be accessible and provide for rapid circuit checks. The wide mating tolerance, color-coding, and small size of the Alden Miniature Back Connector makes it ideal for this type application.

IN DECADE UNITS



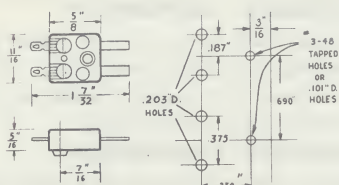
Here's the Alden Miniature Back Connector used in a plug-in decade unit. In this application a number of these units are mounted side by side. There is not enough space to exert the heavy insertion and removal leverage required with the conventional multi-contact connectors. So the Alden Miniature Back Connector with its wide-mating tolerances and floating-clip action is chosen. Moreover the problems of production wiring and servicing in a cramped space are greatly simplified by the accessible solder terminals and color-coding of this back connector.

CIRCUIT BREAK IN MECHANICAL UNITS



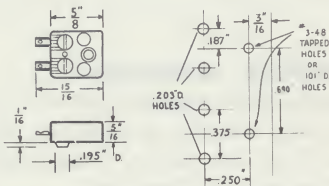
Here's the Alden Miniature Back Connector used in a machine being built up in units with electrical connection carried between the units. The connectors permit instant disassembly of the machine components without unsoldering wiring connections. They are easily mounted where needed with single screw - no troublesome mounting brackets - their small size enables use in cramped space, yet accessible solder terminals and color-coding instantly identify each lead in wiring and servicing.

MALE 462MINMS



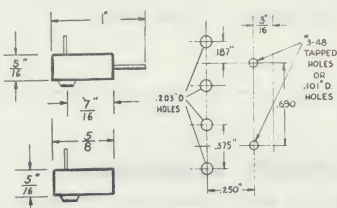
FLOATING-CLIP ACTION - wide mating tolerances.
 COLOR-CODING for instant lead identification.
 ACCESSIBLE SOLDER-TERMINALS for easy wiring and servicing.
 MOLDED BOSSES for positioning in flush or stack mounting.
 MATERIAL - molded in grey phenolic.
 CONTACT RATING - 15 amps.

FEMALE 462MINFS



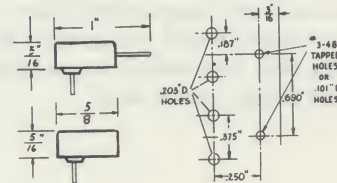
GENEROUS BELL-MOUTH ENTRIES - wide mating tolerances.
 COLOR-CODING for instant lead identification.
 ACCESSIBLE SOLDER-TERMINALS for easy wiring and servicing.
 MOLDED BOSSES for positioning in flush or stack mounting.
 MATERIAL - molded in grey phenolic.
 CONTACT RATING - 15 amps.

MALE 462MINMT



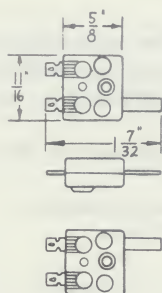
FEMALE 462MINFT
 Alden Miniature Back Connector with solder terminals coming out the top of connector.
 Can be used as standoffs for components. Top solder terminals allow accessible wiring to circuit or component in cramped space.

MALE 462MINMB



FEMALE 462MINFB

Alden Miniature Back Connector with solder terminals coming out the bottom of connector.
 Molded bosses act as feed-throughs - insulate solder-terminals from chassis.
 Components or circuit wiring attached directly to terminals from underside of unit.
 Eliminates wiring on unit surface.

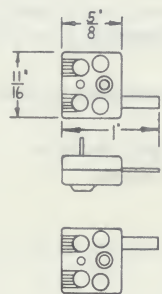


HERMAPHRODITE 462MINMSLH

Alden Miniature Back Connector with solder terminals projecting from back of connector. Male prong in left-hand front pocket, female clip in right-hand front pocket. (Front view)

HERMAPHRODITE 462MINMSRH

Alden Miniature Back Connector with solder terminals projecting from back of connector. Male prong in right-hand front pocket, female clip in left-hand front pocket. (Front view)

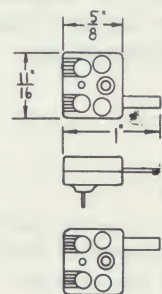


HERMAPHRODITE 462MINMTLH

Alden Miniature Back Connector with solder terminals projecting from top of connector. Male prong in left-hand front pocket, female clip in right-hand front pocket. (Front view)

HERMAPHRODITE 462MINMTRH

Alden Miniature Back Connector with solder terminals projecting from top of connector. Male prong in right-hand front pocket, female clip in left-hand front pocket. (Front view)



HERMAPHRODITE 462MINMBLH

- Alden Miniature Back Connector with solder terminals projecting from bottom of connector. Male prong in left-hand front pocket, female clip in right-hand front pocket. (Front view)

HERMAPHRODITE 462MINMBRH

Alden Miniature Back Connector with solder terminals projecting from bottom of connector. Male prong in right-hand front pocket, female clip in left-hand front pocket. (Front view)

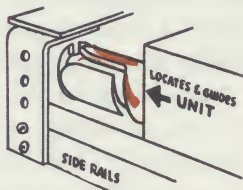
ALDEN "SERVE-A-UNIT" LOCK

The Alden "Serve-A-Unit" Lock is a quick piloting, locking, and ejecting mechanism designed to make plug-in units speedily accessible for checking, servicing or replacement. It was first developed for the easy conversion of standard rack mounting chassis into the slide-in, plug-in type chassis. It has proved equally adaptable in light miniature electronic chassis, to heavy mechanical units. It can be used equally well when units are held vertically - or in any plane.

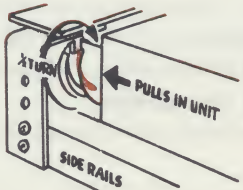
Pat. Pending



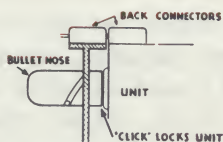
HERE'S HOW IT WORKS



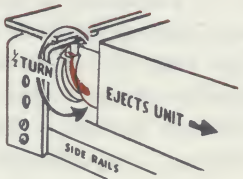
Generous bullet nose pilots unit into alignment - compensates for variations in sheet metal tolerances.



Half turn (180 degrees) of handles pulls in unit to final engagement - easily overcomes any final seating force or the heavy contact insertion pressure of conventional multi-contact back connectors.



Locks in when inserted - provides positive locking action in any position or plane whether in light miniature chassis or heavy mechanical units.

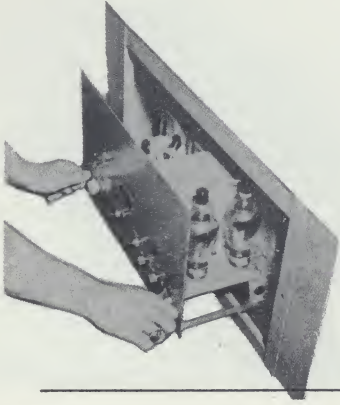


Another half turn of handles unlocks and ejects chassis - overcomes heavy mating inertia or the strong contact retention force of conventional multi-contact back connectors.

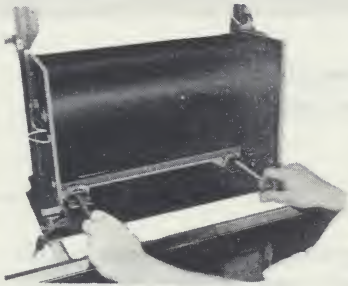
ALDEN PRODUCTS COMPANY

4A
PI

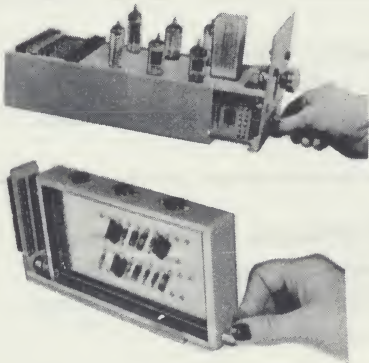
APPLICATIONS



Standard rack mounting chassis converts to easily accessible slide-in, lock-in type chassis. Two small handles on front of chassis operate twin "Serve-A-Unit" Locks - which pilot, pull-in, lock or eject chassis with 1/2 turn of handles. In this case, Alden Color-Coded, Back Connectors make and break circuit, identify each lead.

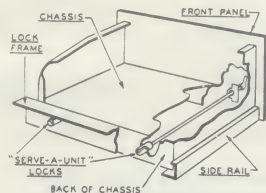


Here's a heavy mechanical unit that uses the Alden "Serve-A-Unit" Locks making it readily accessible for maintenance or replacement. The casting for this 18" facsimile recorder has mounting studs for the "Serve-A-Unit" Locks. These lock the recorder against a stop frame upon insertion of the unit. Although locked firmly in operating position, a 1/2 twist of the 2 handles will quickly free recorder for change-overs in operating mechanisms.

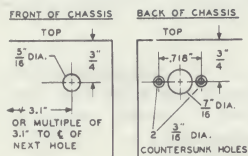


Small, light chassis and plug-in units can use the Alden Miniature "Serve-A-Unit" Lock. Here's a small electronic chassis and a miniature decade chassis. The piloting action of the Miniature "Serve-A-Unit" Lock compensates for variations in sheet metal tolerances and lines up the back connector contacts. Half twist of handle overcomes the back connector insertion force and locks chassis in operating position - always ready for instant removal or replacement.

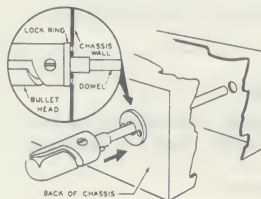
INSTALLATION



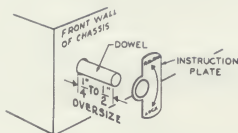
The principles of installing the Alden "Serve-a-Unit" are the same in a wide variety of chassis, and also where used on mechanical units. To illustrate, the principal installation procedure for a standard chassis is outlined here.



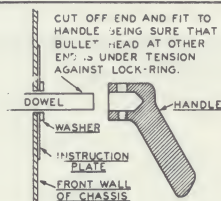
As a first step, holes are drilled in chassis for the dowel of the "Serve-a-Unit" lock. Where the Alden Lock Frame is to be used for the back stop, the height of holes from top of chassis is fixed (as noted) to match the Lock Frame. The spacing apart of the holes should be a multiple of 3.1" to match Lock Frame. This will still allow sufficient room for chassis components mounted under chassis in almost every case.



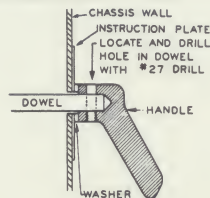
When the holes have been drilled, the lock ring is slipped into alignment with the holes in the back of chassis and held while the dowel of the "Serve-a-Unit" lock is inserted through the chassis. Where two locks are used, as in this case, be sure to place left hand and right hand dowels in proper holes. The "bullet head" is marked for this purpose.



When the dowel is in place, slip instruction plate and washer over the dowel protruding through the front panel. This dowel you may order to length. This length should be 1/4" to 1/2" oversize to allow for wandering tolerances in sheet metal and sheet metal working.

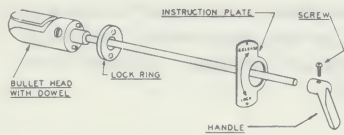


Pushing the bullet head against the lock-ring on the back side of chassis, the handle should be fitted on front. The handle must hold the rod so the pressure of the bullet head on the locking ring in back side is maintained. Therefore the dowel length may have to be trimmed.



After dowel is trimmed, fit handle over dowel. Use prick punch through hole in handle to locate drill point in dowel. Remove handle and drill hole in dowel with #27 drill. Replace handle and insert pin screw tight.

SPECIFICATIONS



SERVE-A-UNIT LOCK

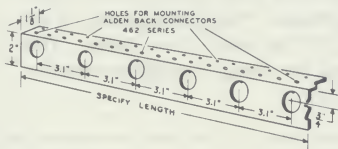
Left-hand assembly - **11019-3A LH**

Right-hand assembly - **11019-3ARH**

For use in large size units, pilots chassis in and out with facility.

TO ORDER

Specify overall outside dimensions from front to back wall of chassis or unit. (We will furnish proper dowel length to accommodate handle and compensate for sheet metal tolerances).



LOCK FRAME 11019-2-2A

For mounting across back of rack--has continuous lock holes spaced 3.1" apart to receive Serve-A-Unit bullet head. Top has continuous punched holes to take Alden Back Connectors, 462 Series. Frame is steel--grey enamel finish.

TO ORDER

Frame is available in continuous lengths to your specifications. For any given chassis, specify overall width and height and we will furnish frame to correct width (1/8" wider than chassis).



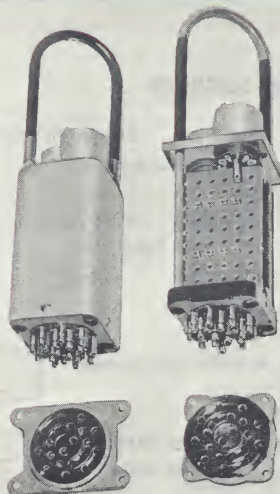
UNIVERSAL BRACKET BR-11

For holding lock frame to side rails. Adjustable for use with chassis of 1-1/2", 2", and 3" heights. Bracket is steel--grey enamel finish.

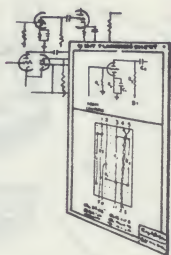
TO ORDER - Specify part number.

ALDEN "20" OPEN AND SHIELDED PLUG-IN PACKAGES

Here are the Alden "20" Open and Shielded Plug-In Packages. They can be the answer to the majority of your circuit unitizing requirements. These packages amazingly simplify equipment construction and circuitry layout--give wide mounting flexibility--and speed assembly. In completed equipment, because they are accessible, they can easily be checked, removed and replaced therefore making possible remarkably simple service and maintenance.



DESIGN FEATURES



Organize Circuits Quickly for Systematic Layout and Construction

Schematics of most electronic equipment can be broken down into circuit blocks of logically associated functions and quickly laid out on full scale Unit Planning Sheets for mounting on special pre-punched multi-hole terminal cards. These special cards have wide flexibility to take an infinite number of circuit variations.



Get the Most Natural Easy Sub-Division of Labor in Manufacture

Solder Terminals and sockets quickly rivet to the terminal card according to layout on Unit Planning Sheet. Components snap into special Alden Miniature Terminals which hold them for soldering. Wiring and soldering of circuit is an open, easy-to-work sub-assembly operation.



Insure the Lowest Operational and Service Costs in Final Equipment

Completed, the Plug-in Package makes the elements of equipment easily accessible replaceable units. In operation, visual or instrument checks are easily made. Spare units can be plugged in so equipment doesn't have to be inoperable if repairs are necessary.

ALDEN PRODUCTS COMPANY **5A**
PI

ALDEN "20" OPEN PACKAGE CONSTRUCTION

TUBE SOCKETS



#407SMA Seven pin tube socket with stud and eyelet



#409SMA Nine pin tube socket with stud and eyelet



BAILS Complete with Screws

#H10020-4A for single card assembly

#H10020-5A for double card assembly

Color Coded insulating tubing available as specified see Page 6A Sec. PI.

LIDS



#L10020 takes no tube sockets



#L10020-77 takes two 7 pin tube sockets



#L10020-7 takes one 7 pin tube socket



#L10020-79 takes one 9 and one 7 pin tube socket.



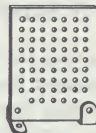
#L10020-9 takes one 9 pin tube socket



#L10020-99 takes two 9 pin tube sockets

Add "SA" for tube shield base.

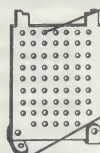
TERMINAL MOUNTING CARDS



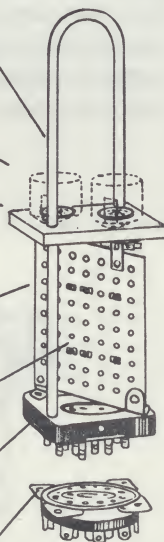
#650-20-1A for single card assembly with two tube sockets



#650-20-2A for double card assembly



#650-20-3A for single card assembly with only one tube socket



MINIATURE TERMINALS



#651T Miniature double end



#653T Double end ratchet action



#652T Miniature single end



#654T Single end ratchet action

For complete information see Page 10A Section PI.

ALDEN "20" NON-INTERCHANGEABLE BASE



100Q-20 Series - For complete information on how to vary pin layout and make Non-Interchangeable, see Page 7C Section PI.

ALDEN "20" NON-INTERCHANGEABLE SOCKETS



400-20 Series - Chassis Mounting Socket takes minimum of space on chassis.



400LG-20 Series - Rack Mounting Socket. Whole banks can be built up on "U" channels.

Pin layout should be specified to agree with Base. For complete information on how to make Non-Interchangeable and have variable clip retention force see Page 7C Section PI.

Any package can be constructed from these basic components. For minimum inventory, order basic components by part number.

ALDEN "20" SHIELDED PACKAGE CONSTRUCTION

TUBE SOCKETS



#407SMA Seven pin tube socket with stud and eyelet



#409SMA Nine pin tube socket with stud and eyelet

BAIL



#H10020-2A For all assemblies - complete with screws
Color Coded insulating tubing available as specified see Page 6A Sec. PI.

HOUSINGS

Complete with 4 Screws



#C10020-A takes no tube sockets



#C10020-77A takes two 7 pin tube sockets



#C10020-7A takes one 7 pin tube socket



#C10020-79A takes one 9 and one 7 pin tube socket.



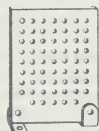
#C10020-9A takes one 9 pin tube socket



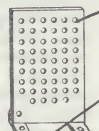
#C10020-99A takes two 9 pin tube sockets

Add "S" for tube shield bases. Add "H" for Bail Holes.
Housings can be anodized as specified.

TERMINAL MOUNTING CARDS



#650-20-1A for single card assembly



#650-20-2A for double card assembly

MINIATURE TERMINALS



#651T Miniature double end



#653T Double end ratchet action



#652T Miniature single end



#654T Single end ratchet action

For complete information see Page 10A Section PI.

ALDEN "20" NON-INTERCHANGEABLE BASE



ALDEN "20" NON-INTERCHANGEABLE BASE
100Q-20 Series - For complete information on how to vary pin layout and make Non-Interchangeable, see Page 7C Section PI.

ALDEN "20" NON-INTERCHANGEABLE SOCKETS



400-20 Series - Chassis Mounting Socket takes minimum of space on chassis.



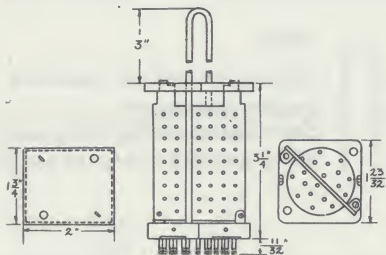
400LG-20 Series - Rack Mounting Socket. Whole banks can be built up on "U" channels.
Pin layout should be specified to agree with Base. For complete information on how to make Non-Interchangeable and have variable clip retention force see Page 7C Section PI.

Any package can be constructed from these basic components. For minimum inventory, order basic components by part number.

ALDEN PRODUCTS COMPANY

5C
PI

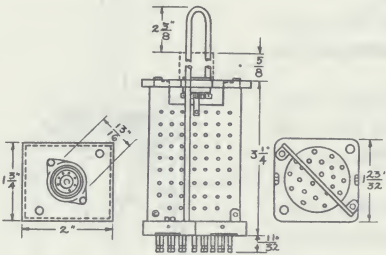
SPECIFICATIONS OPEN PLUG-IN PACKAGES



10,020Q-1T-HL — Single Card No Tube Sockets

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) bail, (1) top cover plate.

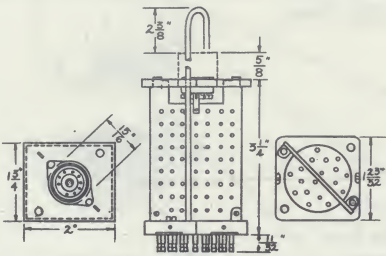
For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



10,020Q-1T-7HL — Miniature 7 Pin Tube Socket on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) 7 pin miniature tube socket, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) bail, (1) top cover plate.

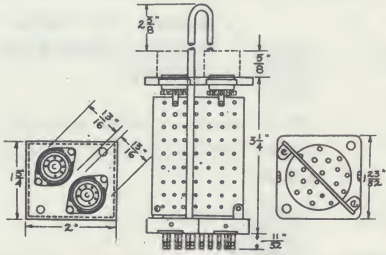
Add "S" to package number for tube shield base riveted to top cover plate. For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



10,020Q-1T-9HL — Miniature 9 Pin Tube Socket on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) 9 pin miniature tube socket, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) bail, (1) top cover plate.

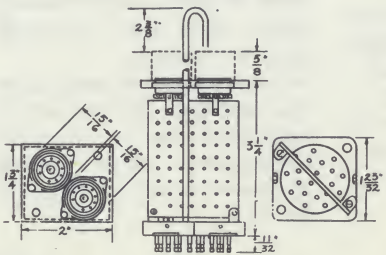
Add "S" to package number for tube shield base riveted to top cover plate. For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



10,020Q-1T-77HL — Two Miniature 7 Pin Tube Sockets on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (2) 7 pin miniature tube sockets, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series (1) bail, (1) top cover plate.

Add "S" to package number for tube shield base riveted to top cover plate. For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.

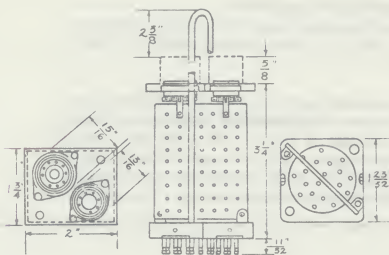


10,020Q-1T-99HL — Two Miniature 9 Pin Tube Sockets on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (2) 9 pin miniature tube sockets, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) bail, (1) top cover plate.

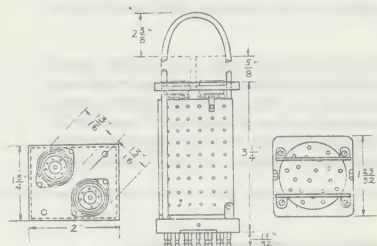
Add "S" to package number for tube shield base riveted to top cover plate. For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.

SPECIFICATIONS OPEN PLUG-IN PACKAGES



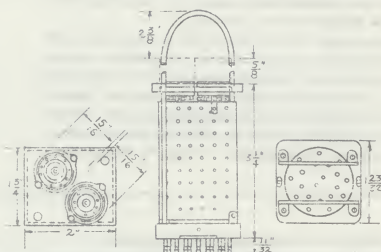
10,020Q-1T-79HL — Miniature 7 and 9 Pin Tube Sockets on Single Cord
Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) 7 and (1) 9 pin miniature tube socket, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) bail, (1) top cover plate.

Add "S" to package number for tube shield base riveted to top cover plate. For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



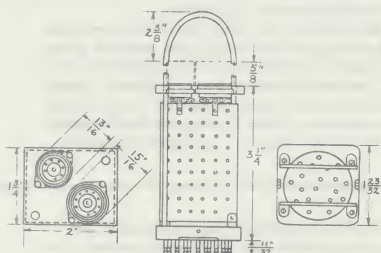
10,020Q-2T-77HL — Two Miniature 7 Pin Tube Sockets on Double Cord
Standard package has (2) terminal cards, (32) unstaked miniature terminals #652T, (2) 7 pin miniature tube sockets, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) bail, (1) top cover plate.

Add "S" to package number for tube shield base riveted to top cover plate. For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



10,020Q-2T-99HL — Two Miniature 9 Pin Tube Sockets on Double Cord
Standard package has (2) terminal cards, (32) unstaked miniature terminals #652T, (2) 9 pin miniature tube sockets, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) bail, (1) top cover plate.

Add "S" to package number for tube shield base riveted to top cover plate. For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



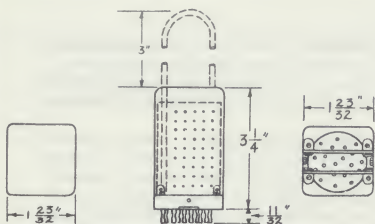
10,020Q-2T-79HL — Miniature 7 and 9 Pin Tube Sockets on Double Cord
Standard package has (2) terminal cards, (32) unstaked miniature terminals #652T, (1) 7 and (1) 9 pin miniature tube socket, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) bail, (1) top cover plate.

Add "S" to package number for tube shield base riveted to top cover plate. For terminals staked, add "A" to package number and indicate on Unit Planning Sheet type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.

ALDEN PRODUCTS COMPANY

SE
PI

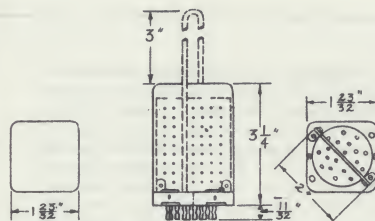
SPECIFICATIONS SHIELDED PLUG-IN PACKAGES



10,020Q-2TC — Double Card No Tube Sockets

Standard package has (2) terminal cards, (32) unstaked miniature terminals #652T, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

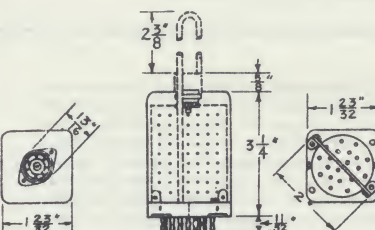
plate. Add "H" to assembly number for ball. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



10,020Q-1TC — Single Card No Tube Sockets

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

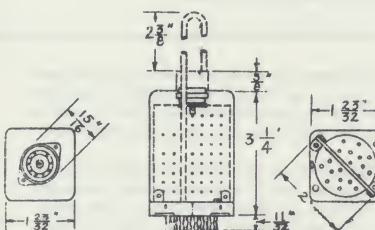
plate. Add "H" to assembly number for ball. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



10,020Q-177C — Miniature 7 Pin Tube Socket on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) 7 pin miniature tube socket, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

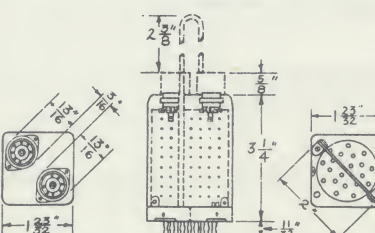
Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for ball. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



10,020Q-179C — Miniature 9 Pin Tube Socket on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) 9 pin miniature tube socket, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for ball. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.

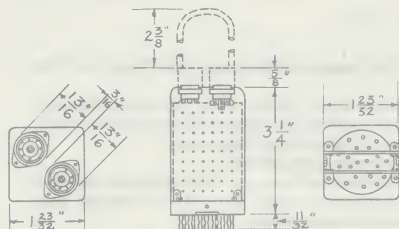


10,020Q-1777C — Two Miniature 7 Pin Tube Sockets on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (2) 7 pin miniature tube sockets (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

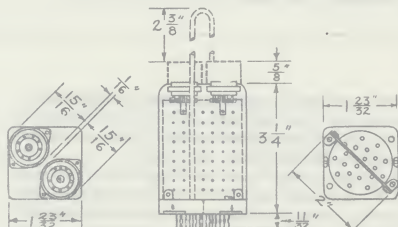
Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for ball. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.

SPECIFICATIONS SHIELDED PLUG-IN PACKAGES



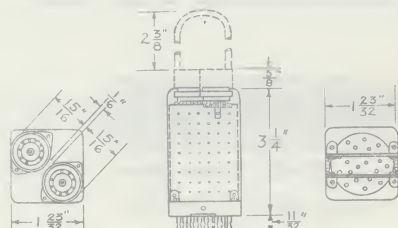
10,020Q-2T77C — Two Miniature 7 Pin Tube Sockets on Double Card
Standard package has (2) terminal cards, (32) unstaked miniature terminals #052T, (2) 7 pin miniature tube-sockets, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for bail. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



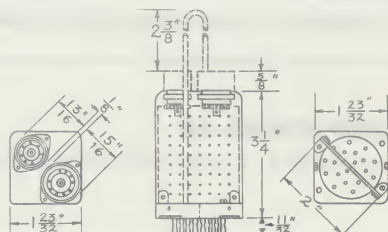
10,020Q-1T99C — Two Miniature 9 Pin Tube Sockets on Single Card
Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (2) 9 pin miniature tube sockets, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for bail. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



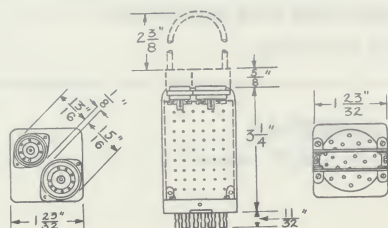
10,020Q-2T99C — Two Miniature 9 Pin Tube Sockets on Double Card
Standard package has (2) terminal cards, (32) unstaked miniature terminals #652T, (2) 9 pin miniature tube sockets, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for bail. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



10,020Q-1T79C — Miniature 7 and 9 Pin Tube Sockets on Single Card
Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) 7 and (1) 9 pin miniature tube socket, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for bail. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.



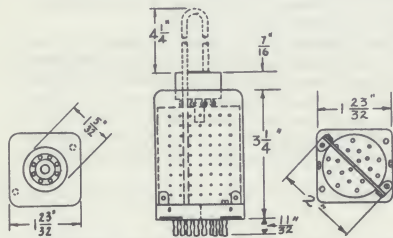
10,020Q-2T79C — Miniature 7 and 9 Pin Tube Sockets on Double Card
Standard package has (2) terminal cards, (32) unstaked miniature terminals #652T, (1) 7 and (1) 9 pin miniature tube socket, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for bail. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.

ALDEN PRODUCTS COMPANY

SPECIFICATIONS OCTAL PLUG-IN PACKAGES

These Kits take the majority of octal tubes.
Special bails are available to take large type tubes.



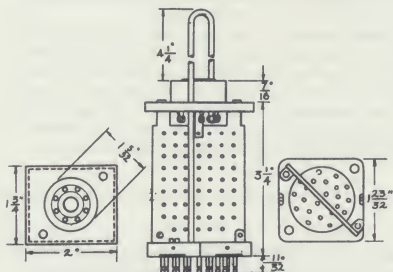
10,020 Q-1T8C Shielded With Octal Tube Socket on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (1) octal tube socket, (1) Alden 20-pin non-interchangeable base #100Q-20 Series, (1) housing.

Add "H" to assembly number for bail.

Add "A" to assembly number for terminals staked and indicate in which holes they are to be staked. Use handy Unit Planning Sheet Page 1C, Section PI shows you how.

Specify Alden "20" Non-Interchangeable Socket separately; it is not part of the package. Page 7C, Section PI shows you how to order Non-Interchangeable Base and Sockets with variable pin pattern.



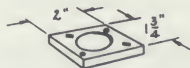
10,020 Q-1T99C — Two Miniature 9 Pin Tube Sockets on Single Card

Standard package has (1) terminal card, (20) unstaked miniature terminals #652T, (2) 9 pin miniature tube sockets, (1) Alden 20 pin Non-Interchangeable base #100Q-20 Series, (1) housing.

Add "S" to package number for tube shield base riveted to top cover plate. Add "H" to assembly number for bail. For terminals staked, add "A" to package number and indicate type and holes in which they are to be staked. See Page 1D Section PI for instructions. Specify Alden "20" Non-Interchangeable socket separately; it is not part of the package. For information on how to order Non-Interchangeable Base and Sockets with variable pin pattern, see Page 7C Section PI.

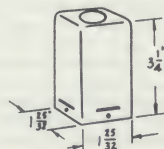
OCTAL PLUG-IN PACKAGE CONSTRUCTION

The standard basic components shown on Pages 5B-6B/PI are also standard for the Octal Plug-In Packages. The only variations being:



LID L10020-8

Has hole punched to take octal tube socket.



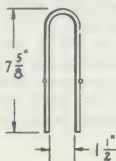
HOUSING C10020-8A

Has hole punched to take octal tube socket.



OCTAL TUBE SOCKET 408 SMA

Complete with stud and eyelet for easy mounting.



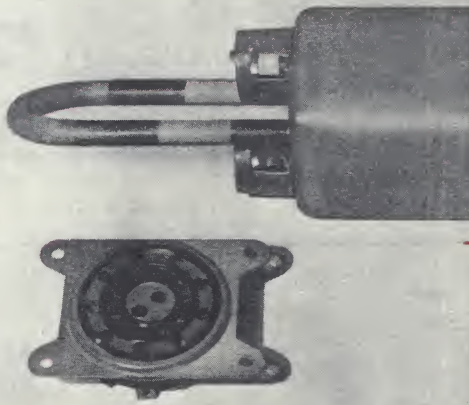
BAIL H10020-6A

Complete with 2 screws.

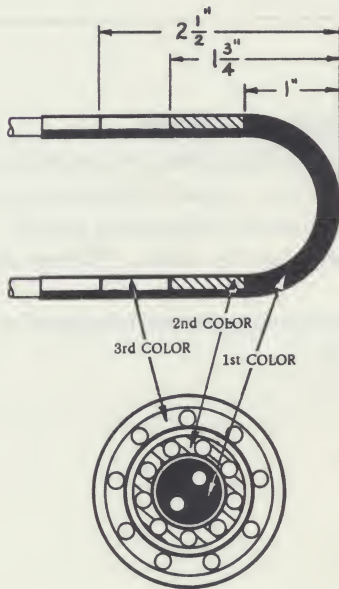
COLOR CODING

Alden offers a simple means of color coding to simplify maintenance and to prevent errors in inter-changing Alden "20" Plug-In Packages (Sec. PI, pages 5A-5H). Each functional unit in the equipment can be assigned a color code so that plug-in units can be easily and quickly matched with sockets. Colors are brilliant, contrasting and lasting. The thermoplastic insulation used in coding the handles also provides insulation against accidental faults in your equipment.

On your order for Alden "20" Plug-In Packages and Alden "20" Non-Interchangeable Sockets, specify the color schemes you want and Aldens will furnish the handles insulated and coded, and the sockets coded. Or at your option you may order from the items below the materials to do your own color coding.



DESIGN FEATURES



CUT SLEEVE AND SOCKET — COLORED

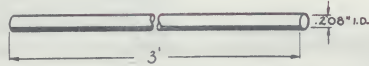
Aldens will color code the handles and sockets for you. Specify first, second and third color for the standard method of coding shown in the two diagrams at the left.

Colors available are:

Red	Yellow
White	Green
Blue	Black (Black is the natural, unpainted color of Sleeves and Sockets.)
Orange	

ALDEN PRODUCTS COMPANY **6A**
PI

SPECIFICATIONS



APW 50-208

APW 50-208 UNCUT SLEEVING

Tubing is 1/32" wall of black thermoplastic material (.208" I.D.). Can be ordered any length up to 3 feet. Specify length.



APW 24

Red	Orange
White	Yellow
Blue	Green

APW 24 POLYVINYL INK

Alden ink for coding handle insulation above is available in 1/2 pt. metal containers (for approximately 500 handles, depending on use). Apply by dipping insulation in the ink. Specify color. Thinner is also available.

This can be used on any thermoplastic materials (vinylite, etc.).



APW 25

Red	Orange
White	Yellow
Blue	Green

APW 25 ALDEN LACQUER

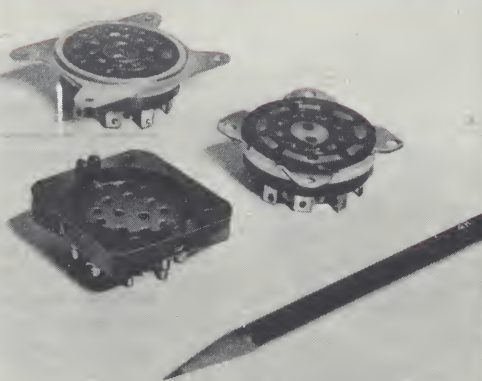
Alden lacquer for coding sockets or connectors is available in 1/2 pt. metal containers (for approximately 500 sockets, depending on use). Apply with brush. Specify color. Thinner is also available.

This can be used on any thermosetting plastics (bakelite, etc.).

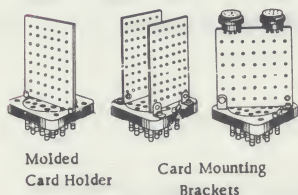
ALDEN "20" NON-INTERCHANGEABLE BASE & SOCKETS

100Q/400-20 SERIES

Here is the plug-in base and sockets of tremendous flexibility, specially designed for plug-in unit construction.... Solves many unitizing problems. The base can be standard for making your relays, circuit elements and special components compact plug-in units.... quickly, easily and at low cost. Special design of the base eliminates difficulties encountered in the use of conventional octal types. There's no molded center boss to break. Pins are strong and stubby - do not bend and break out. Alden Non-Interchangeable pin layout easily orients base and socket. By selecting variations of pin layout of less than 20 pins, danger of mismatching and burned out units can be eliminated and critical voltages or signals isolated.

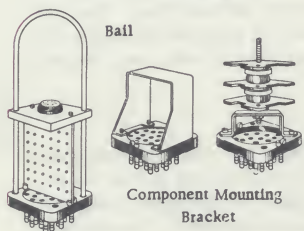


CONSTRUCTION FEATURES



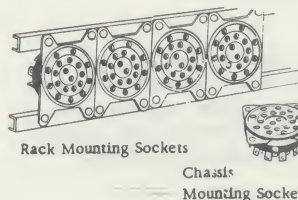
Molded Card Holder

Card Mounting Brackets



Ball

Component Mounting Bracket



Rack Mounting Sockets

Chassis Mounting Socket

The scope of the Alden base as a mounting medium is almost unlimited....cards, brackets and bails can be quickly and easily attached using standard assembly tools. When the base is to be used for electronic plug-in units, the Alden Terminal Card Mounting System for holding components and miniature tube sockets, mounts using either the molded card boss or metal brackets.

Special metal brackets for mounting relays or special units can be easily and solidly attached. Handles and supporting bails can be slipped into corner holes and securely fastened from below.

Two types of sockets provide extreme flexibility. For conventional chassis mounting the Alden 400-20 chassis mounting socket takes a minimum of space. It eyelets or rivets to chassis and the mounting area is all within the housing dimensions. Where many close grouped units are to be used, the most economical and efficient method is through the use of the Alden 400LG-20 rack mounting socket. These sockets mount on U-Channels side-by-side or in series with overlapping ears.

ALDEN PRODUCTS COMPANY

7A
PI

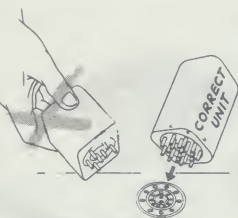
DESIGN FEATURES

Non-Interchangeable - 11 to 20 pins can be used, pattern can be varied to allow isolation of critical voltages and frequencies or to make unit non-interchangeable with any unit having same number of pins. . . Unit then mates only with correct socket thereby absolutely prevents mismatching and the danger of burned out units.

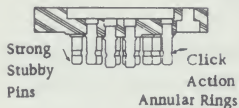
Rugged - The difficulty in using conventional bases for plug-in unit construction has been that pins would bend and molded boss had tendency to break. This shortened life of plug-in unit considerably. However, these headaches are avoided in the Alden Non-Interchangeable Base by using short, stubby pins and elimination of the molded center boss entirely.

Variable Retention Force - Click action of pins and clips allows you to select retention force of base over a wide range. By varying the number of locking contacts in the socket, hold can be solid to withstand heavy vibration and shock without shaking loose, or retention can be only slight for easy removal if necessary.

Easy Locating - Slight projection of pins centers plug-in unit quickly for locating. . . locating rings and alignment indicator guide pins for quick rotation to insertion position. Color coding of rings available for fast identification and matching of units.



Variable Pin Pattern
Insures Only Correct
Unit Mates In Socket

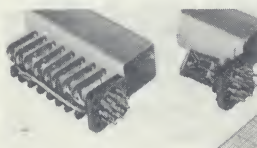


APPLICATIONS

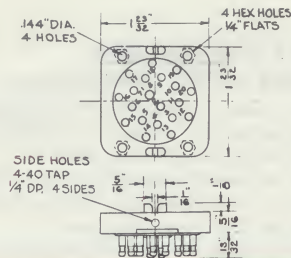
The Alden "20" Non-Interchangeable Base and Sockets are the heart for this series of shielded plug-in electronic sub-assemblies. Using the Alden Terminal Card Mounting System to give ease of layout and wiring assembly--flip-flop, gating, oscillator circuits, etc. become compact plug-in units.

This open unit, designed using the Alden "20" Non-Interchangeable base, sockets and the Alden Terminal Card Mounting System, has the same flexibility as the shielded. . . . with the additional features of being open for rapid heat dissipation and having handle for easy plug-in and removal where many are used in small areas.

By using the Alden "20" Non-Interchangeable Base, coupled with simple brackets and standard housings, many additional components conveniently become plug-in units. Relays, filters, stepping switches, and condensers are given protection against dust and rough handling while at the same time making them economical plug-in units.



SPECIFICATIONS



ALDEN "20" NON-INTERCHANGEABLE BASE 100Q-20 SERIES

The rugged base that can become standard for many of your plug-in unit designs.

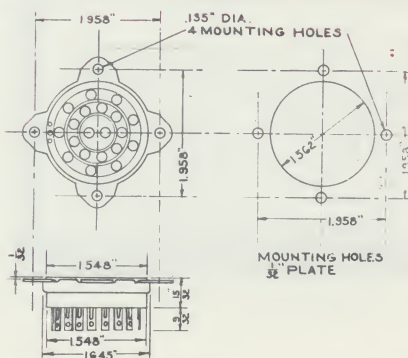
MATERIAL: Molded of general purpose phenolic. (Black mica filled phenolic (NA-AX100) available as specified).

HOUSING MOUNTING: Tapered notches on sides provide for easy crimping of housing over base. Housing can also be screwed to drilled and tapped side holes.

PINS: Pins are nickel plated brass with open ends for fast, efficient "dip" soldering of leads.

CHART FOR RECOMMENDED STANDARD PIN LAYOUT

No. of Pins	Part No.	Pin Positions Used	No. of Pins	Part No.	Pin Positions Used
20	100Q-20	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15	100Q-20-15	- 2 - - 5 6 7 - - 10 11 12 13 14 15 16 17 18 19 20
19	100Q-20-19	1 - 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15	100Q-20-151	- 2 3 - 5 6 7 - - 11 12 13 14 15 16 17 18 19 20
18	100Q-20-18	1 2 - 4 5 6 - 8 9 10 11 12 13 14 15 16 17 18 19 20	15	100Q-20-152	- 2 - 4 5 6 7 8 - - 12 13 14 15 16 17 18 19 20
18	100Q-20-181	1 2 3 4 5 6 - 8 9 10 - 12 13 14 15 16 17 18 19 20	15	100Q-20-153	1 2 - 4 5 6 7 - - - 12 13 14 15 16 17 18 19 20
17	100Q-20-17	- 2 3 - 5 6 7 8 9 10 - 12 13 14 15 16 17 18 19 20	15	100Q-20-154	- 2 - 4 5 6 7 - 9 - - 12 13 14 15 16 17 18 19 20
17	100Q-20-171	1 2 - 4 - 6 7 - 9 10 11 12 13 14 15 16 17 18 19 20	14	100Q-20-14	- 2 3 4 - - - 8 9 - - 12 13 14 15 16 17 18 19 20
16	100Q-20-16	1 2 - 4 - 6 - 8 - 10 11 12 13 14 15 16 17 18 19 20	13	100Q-20-13	- 2 - 4 - - - 8 - - 11 12 13 14 15 16 17 18 19 20
16	100Q-20-161	1 2 - 4 - 6 - 8 9 - 11 12 13 14 15 16 17 18 19 20	12	100Q-20-12	1 - - 4 - - - 8 - - - 12 13 14 15 16 17 18 19 20
16	100Q-20-162	1 2 - 4 5 6 - 8 - - 11 12 13 14 15 16 17 18 19 20	11	100Q-20-11	1 - 3 - - - - - - - 12 13 14 15 16 17 18 19 20
16	100Q-20-163	1 2 - 4 5 - 7 8 - - 11 12 13 14 15 16 17 18 19 20	For quantity runs other pin layouts can be specified.		



ALDEN "20" CHASSIS MOUNTING NON-INTERCHANGEABLE SOCKET 400-20 SERIES

Here is the socket requiring a minimum of space in your chassis.

MATERIAL: Molded of general purpose phenolic. (Black mica filled phenolic or NA-AX100 available if specified.) Sturdy mounting bracket is cadmium plated steel.

MOUNTING: Eyelets or rivets to chassis using standard production methods.

CONTACTS: The clips are beryllium copper tin plated with a current carrying capacity of 17 amps.

COLOR CODE: Identification color code can be specified. The specified color or colors are painted within locating rings. The same color is added to mating unit for fast positive matching.

CLIP RETENTION FORCE: In the standard model 3 locking contacts in the clips give a clickaction on the base pins and a minimum pull-out force of 28 lbs. By adding to the number of locking contacts in the socket, added pull-out force can be obtained.

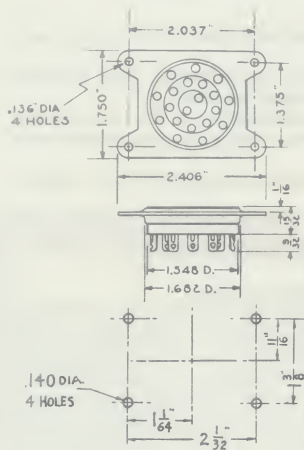
CHART FOR RECOMMENDED STANDARD CONTACT LAYOUT

No. of Clips	Part No.	Clip Layout	No. of Clips	Part No.	Clip Layout
20	400-20	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15	400-20-15	- 2 - - 5 6 7 - - 10 11 12 13 14 15 16 17 18 19 20
19	400-20-19	1 - 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15	400-20-151	- 2 3 - 5 6 7 - - 11 12 13 14 15 16 17 18 19 20
18	400-20-18	1 2 - 4 5 6 - 8 9 10 11 12 13 14 15 16 17 18 19 20	15	400-20-152	- 2 - 4 5 6 7 8 - - 12 13 14 15 16 17 18 19 20
18	400-20-181	1 2 3 4 5 6 - 8 9 10 - 12 13 14 15 16 17 18 19 20	15	400-20-153	1 2 - 4 5 6 7 - - - 12 13 14 15 16 17 18 19 20
17	400-20-17	- 2 3 - 5 6 7 8 9 10 - 12 13 14 15 16 17 18 19 20	15	400-20-154	- 2 - 4 5 6 7 - 9 - - 12 13 14 15 16 17 18 19 20
17	400-20-171	1 2 - 4 - 6 7 - 9 10 11 12 13 14 15 16 17 18 19 20	14	400-20-14	- 2 3 4 - - - 8 9 - - 12 13 14 15 16 17 18 19 20
16	400-20-16	1 2 - 4 - 6 - 8 - 10 11 12 13 14 15 16 17 18 19 20	13	400-20-13	- 2 - 4 - - - 8 - - 11 12 13 14 15 16 17 18 19 20
16	400-20-161	1 2 - 4 - 6 - 8 9 - 11 12 13 14 15 16 17 18 19 20	12	400-20-12	1 - - 4 - - - 8 - - - 12 13 14 15 16 17 18 19 20
16	400-20-162	1 2 - 4 5 6 - 8 - - 11 12 13 14 15 16 17 18 19 20	11	400-20-11	1 - 3 - - - - - - 12 13 14 15 16 17 18 19 20
16	400-20-163	1 2 - 4 5 - 7 8 - - 11 12 13 14 15 16 17 18 19 20	For quantity runs other clip layouts can be specified.		

ALDEN PRODUCTS COMPANY

7C
PI

SPECIFICATIONS



ALDEN "20" RACK MOUNTING NON-INTERCHANGEABLE SOCKET 400LG-20 SERIES

Designed to fit side-by-side or in series with overlapping ears, 50 of these compact sockets will mount on a 10-1/2" x 19" rack mounting panel having six 3/8" U-Channels.

MATERIAL: Molded of general purpose phenolic. (Black mica filled phenolic or NA-AX100 available if specified.) Sturdy mounting bracket is cadmium plated steel.

MOUNTING: Eyelets or rivets to chassis using standard production methods.

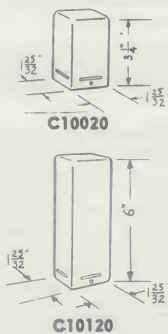
CONTACTS: The clips are beryllium copper tin plated with a current carrying capacity of 17 amps.

COLOR CODE: Identification color code can be specified. The specified color or colors are painted within locating rings. The same color is added to mating unit for fast positive matching.

CLIP RETENTION FORCE: In the standard model 3 locking contacts in the clips give a click action on the base pins and a minimum pull-out force of 28 lbs. By adding to the number of locking contacts in the socket, added pull-out force can be obtained.

CHART FOR RECOMMENDED STANDARD CONTACT LAYOUT

No. of Clips	Part No.	Clip Layout	No. of Clips	Part No.	Clip Layout
20	400LG-20	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15	400LG-20-15	- 2 - - 5 6 7 - - 10 11 12 13 14 15 16 17 18 19 20
19	400LG-20-19	1 - 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15	400LG-20-151	- 2 3 - 5 6 7 - - 11 12 13 14 15 16 17 18 19 20
18	400LG-20-18	1 2 - 4 5 6 - 8 9 10 11 12 13 14 15 16 17 18 19 20	15	400LG-20-152	- 2 - 4 5 6 7 8 - - 12 13 14 15 16 17 18 19 20
18	400LG-20-181	1 2 3 4 5 6 - 8 9 10 - 12 13 14 15 16 17 18 19 20	15	400LG-20-153	1 2 - 4 5 6 7 - - - 12 13 14 15 16 17 18 19 20
17	400LG-20-17	- 2 3 - 5 6 7 8 9 10 - 12 13 14 15 16 17 18 19 20	15	400LG-20-154	- 2 - 4 5 6 7 - 9 - - 12 13 14 15 16 17 18 19 20
17	400LG-20-171	1 2 - 4 - 6 7 - 9 10 11 12 13 14 15 16 17 18 19 20	14	400LG-20-14	- 2 3 4 - - - 8 9 - - 12 13 14 15 16 17 18 19 20
16	400LG-20-16	1 2 - 4 - 6 - 8 - 10 11 12 13 14 15 16 17 18 19 20	13	400LG-20-13	- 2 - 4 - - - 8 - - 11 12 13 14 15 16 17 18 19 20
16	400LG-20-161	1 2 - 4 - 6 - 8 9 - 11 12 13 14 15 16 17 18 19 20	12	400LG-20-12	1 - - 4 - - - 8 - - 12 13 14 15 16 17 18 19 20
16	400LG-20-162	1 2 - 4 5 6 - 8 - - 11 12 13 14 15 16 17 18 19 20	11	400LG-20-11	1 - 3 - - - - - - 12 13 14 15 16 17 18 19 20
16	400LG-20-163	1 2 - 4 5 - 7 8 - - 11 12 13 14 15 16 17 18 19 20	For quantity runs other clip layouts can be specified.		



HOUSINGS

Here are housings to dress up and shield the plug-in kits. These housings are seamless aluminum and can easily be crimped over the base or screwed on with 4/40 screws.

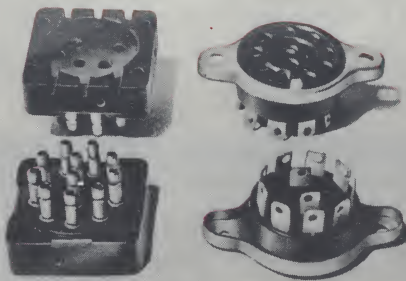
For variations see the Alden "20" Plug-in Packages. Page 5C Section PI.

ALDEN "11" NON-INTERCHANGEABLE BASES & SOCKETS

100/400-11 SERIES

These Alden plug-in bases are designed for variable pin patterns to insure that only the correct unit mates in its socket--to allow isolation of pins with critical voltages or current. Strong, stubby pins eliminate the bent pins and broken bosses of conventional octal or loctal bases.

Wherever you want a light rugged 11 pin base that will guard your expensive equipment against short circuit blowouts caused by misconnection, specify the Alden "11" Non-Interchangeable Series.



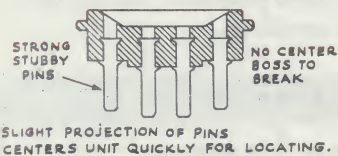
DESIGN FEATURES



VARIABLE PIN PATTERN INSURES ONLY CORRECT UNIT MATES IN SOCKET

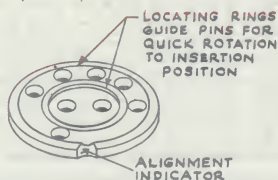
Non-Interchangeable

By using less than 11 pins, the pin pattern can be varied to isolate critical voltages or frequencies or to make unit non-interchangeable with any unit having same number of pins.



Rugged

Strong, stubby pins and no center boss to break out, gives the Alden "11" Bases special durability and long life.

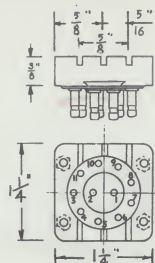


Easy Locating

Slight projection of pins quickly centers base in socket for locating....locating rings and alignment indicator guide pins for rotation to insertion. Color coding of rings available for fast identification.

ALDEN PRODUCTS COMPANY **8A**
PI

SPECIFICATIONS

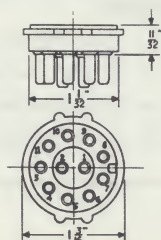


100Q 2/11 SERIES

High top base with 3 slots for holding terminal cards. Housing crimps or screws to base. Click action pins allows you to select variable retention force between base and socket. Molded of general purpose phenolic. (Black mica filled phenolic - NA-AX100 available as specified).

CHART FOR RECOMMENDED STANDARD PIN LAYOUT

No. of Pins	Part No.	Pin Positions Used	No. of Pins	Part No.	Pin Positions Used
11	100Q-11	1 2 3 4 5 6 7 8 9 10 11	6	100Q-61	- 2 3 - 5 6 7 - - - 11
10	100Q-10	1 - 3 4 5 6 7 8 9 10 11	6	100Q-62	- 2 - 4 5 6 7 8 - - -
9	100Q-9	1 2 - 4 5 6 - 8 9 10 11	6	100Q-63	1 2 - 4 5 6 7 - - - -
9	100Q-91	1 2 3 4 5 6 - 8 9 10 -	6	100Q-64	- 2 - 4 5 6 7 - 9 - -
8	100Q-8	- 2 3 - 5 6 7 8 9 10 -	6	100Q-65	1 - 3 4 5 - - - - 10 11
8	100Q-81	1 2 - 4 - 6 7 - 9 10 11	5	100Q-5	- 2 3 4 - - - 8 9 - -
7	100Q-7	1 2 - 4 - 6 - 8 - 10 11	4	100Q-4	- 2 - 4 - - - 8 - - 11
7	100Q-71	1 2 - 4 - 6 - 8 9 - 11	4	100Q-41	1 - 3 4 - - - - - 11
7	100Q-72	1 2 - 4 5 6 - 8 - - 11	3	100Q-3	1 - - 4 - - - 8 - - -
7	100Q-73	1 2 - 4 5 - 7 8 - - 11	2	100Q-2	1 - 3 - - - - - - -
6	100Q-6	- 2 - - - 5 6 7 - - 10 11	For quantity runs other pin layouts can be specified.		

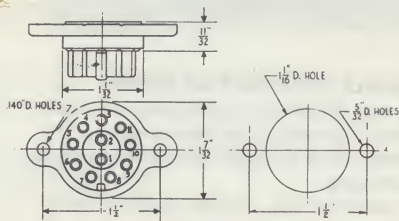


100 2/11 SERIES

Round plug-in base with 3/64" concentric, molded ridge and polarized ear for mounting by spinning can or crimping. Molded of general purpose phenolic. (Black mica filled phenolic - NA-AX100 available as specified).

CHART FOR RECOMMENDED STANDARD PIN LAYOUT

No. of Pins	Part No.	Pin Positions Used	No. of Pins	Part No.	Pin Positions Used
11	100-11	1 2 3 4 5 6 7 8 9 10 11	6	100-61	- 2 3 - 5 6 7 - - - 11
10	100-10	1 - 3 4 5 6 7 8 9 10 11	6	100-62	- 2 - 4 5 6 7 8 - - -
9	100-9	1 2 - 4 5 6 - 8 9 10 11	6	100-63	1 2 - 4 5 6 7 - - - -
9	100-91	1 2 3 4 5 6 - 8 9 10 -	6	100-64	- 2 - 4 5 6 7 - 9 - -
8	100-8	- 2 3 - 5 6 7 8 9 10 -	6	100-65	1 - 3 4 5 - - - - 10 11
8	100-81	1 2 - 4 - 6 7 - 9 10 11	5	100-5	- 2 3 4 - - - 8 9 - -
7	100-7	1 2 - 4 - 6 - 8 - 10 11	4	100-4	- 2 - 4 - - - 8 - - 11
7	100-71	1 2 - 4 - 6 - 8 9 - 11	4	100-41	1 - 3 4 - - - - - 11
7	100-72	1 2 - 4 5 6 - 8 - - 11	3	100-3	1 - - 4 - - - 8 - - -
7	100-73	1 2 - 4 5 - 7 8 - - 11	2	100-2	1 - 3 - - - - - - -
6	100-6	- 2 - - - 5 6 7 - - 10 11	For quantity runs other pin layouts can be specified.		

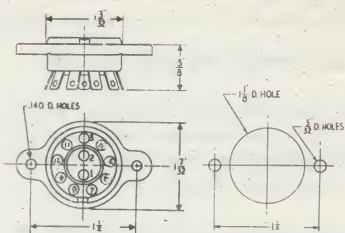


100 2/11P SERIES

Round Alden Non-Interchangeable Base with sturdy mounting plate. Eyelets or rivets to chassis or frame with standard production tools. Molded of general purpose phenolic. (Black mica filled phenolic - NA-AX100 available as specified).

CHART FOR RECOMMENDED STANDARD PIN LAYOUT

No. of Pins	Part No.	Pin Positions Used	No. of Pins	Part No.	Pin Positions Used
11	100-11P	1 2 3 4 5 6 7 8 9 10 11	6	100-61P	- 2 3 - 5 6 7 - - - 11
10	100-10P	1 - 3 4 5 6 7 8 9 10 11	6	100-62P	- 2 - 4 5 6 7 8 - - -
9	100-9P	1 2 - 4 5 6 - 8 9 10 11	6	100-63P	1 2 - 4 5 6 7 - - -
9	100-91P	1 2 3 4 5 6 - 8 9 10 -	6	100-64P	- 2 - 4 5 6 7 - 9 - -
8	100-8P	- 2 3 - 5 6 7 8 9 10 -	6	100-65P	1 - 3 4 5 - - - - 10 11
8	100-81P	1 2 - 4 - 6 7 - 9 10 11	5	100-5P	- 2 3 4 - - - 8 9 - -
7	100-7P	1 2 - 4 - 6 - 8 - 10 11	4	100-4P	- 2 - 4 - - - 8 - - 11
7	100-71P	1 2 - 4 - 6 - 8 9 - 11	4	100-41P	1 - 3 4 - - - - - 11
7	100-72P	1 2 - 4 5 6 - 8 - - 11	3	100-3P	1 - - 4 - - - 8 - - -
7	100-73P	1 2 - 4 5 - 7 8 - - 11	2	100-2P	1 - 3 - - - - - - -
6	100-6P	- 2 - - 5 6 7 - - 10 11	For quantity runs other pin layouts can be specified.		



400 2/11 SERIES

Alden Non-Interchangeable Socket. Rivets or eyelets to chassis by regular production methods. Molded of general purpose phenolic. (Black mica filled phenolic - NA-AX100 available as specified).

CHART FOR RECOMMENDED STANDARD CONTACT LAYOUT

No. of Contacts	Part No.	Contact Positions Used	No. of Contacts	Part No.	Contact Positions Used
11	400-11	1 2 3 4 5 6 7 8 9 10 11	6	400-61	- 2 3 - 5 6 7 - - - 11
10	400-10	1 - 3 4 5 6 7 8 9 10 11	6	400-62	- 2 - 4 5 6 7 8 - - -
9	400-9	1 2 - 4 5 6 - 8 9 10 11	6	400-63	1 2 - 4 5 6 7 - - -
9	400-91	1 2 3 4 5 6 - 8 9 10 -	6	400-64	- 2 - 4 5 6 7 - 9 - -
8	400-8	- 2 3 - 5 6 7 8 9 10 -	6	400-65	1 - 3 4 5 - - - - 10 11
8	400-81	1 2 - 4 - 6 7 - 9 10 11	5	400-5	- 2 3 4 - - - 8 9 - -
7	400-7	1 2 - 4 - 6 - 8 - 10 11	4	400-4	- 2 - 4 - - - 8 - - 11
7	400-71	1 2 - 4 - 6 - 8 9 - 11	4	400-41	1 - 3 4 - - - - - 11
7	400-72	1 2 - 4 5 6 - 8 - - 11	3	400-3	1 - - 4 - - - 8 - - -
7	400-73	1 2 - 4 5 - 7 8 - - 11	2	400-2	1 - 3 - - - - - - -
6	400-6	- 2 - - 5 6 7 - - 10 11	For quantity runs other contact layouts can be specified.		

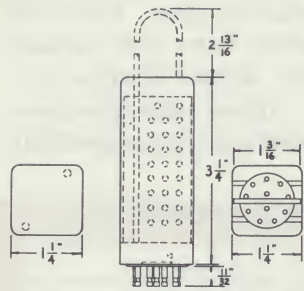
SPECIFICATIONS ALDEN "11" PLUG-IN PACKAGES

10,011Q-1TC SINGLE CARD NO TUBE SOCKET

Standard package has (1) terminal card, (12) unstaked miniature terminals #652T, (1) Alden 11 pin Non-Interchangeable base 100Q 2/11 Series in the pin layout you specify (see Page 8B, Sect. PI), (1) housing.

Add "H" to part number for bail. If staked terminals are desired, add "A", and indicate on the Unit Planning Sheet both type of terminal and the hole pattern in which they are to be staked. See Page 1C, Sect. PI for instructions.

Specify the Alden "11" Non-Interchangeable socket separately, it is not part of the package. Ordering information will be found on Page 8B, Sect. PI.

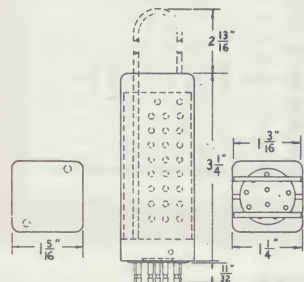


10,011Q-2TC DOUBLE CARD NO TUBE SOCKET

Standard package has (2) terminal cards, (19) unstaked miniature terminals #652T, (1) Alden 11 pin Non-Interchangeable base 100Q 2/11 Series in the pin layout you specify (see Page 8B, Sect. PI), (1) housing.

Add "H" for bail. If staked terminals are desired, add "A", and indicate on the Unit Planning Sheet both type of terminal and the hole pattern in which they are to be staked.

Specify the Alden "11" Non-Interchangeable socket separately, it is not part of the package. Ordering information will be found on Page 8B, Sect. PI.

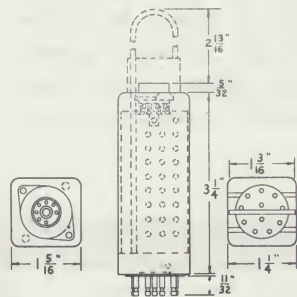


10,011Q-1T-7C MINIATURE 7 PIN TUBE SOCKET SINGLE CARD

Standard package has (1) terminal card, (12) unstaked miniature terminals #652T, (1) 7 pin miniature tube socket, (1) Alden 11 pin Non-Interchangeable base 100Q 2/11 Series in the pin layout you specify (see Page 8B, Sect. PI), (1) housing.

Add "S" to part number for tube shield base riveted to top of can. Add "H" for bail. If staked terminals are desired, add "A", and indicate on the Unit Planning Sheet both type of terminal and the hole pattern in which they are to be staked.

Specify the Alden "11" Non-Interchangeable socket separately, it is not part of the package. Ordering information will be found on Page 8B, Sect. PI.

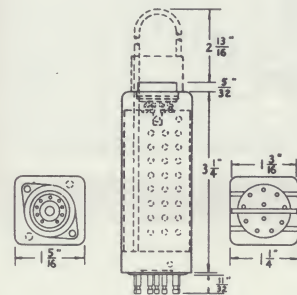


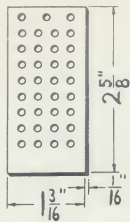
10,011Q-1T-9C MINIATURE 9 PIN TUBE SOCKET ON SINGLE CARD

Standard package has (1) terminal card, (12) unstaked miniature terminals #652T, (1) 9 pin miniature tube socket, (1) Alden 11 pin Non-Interchangeable base 100Q 2/11 Series in the pin layout you specify (see Page 8B, Sect. PI), (1) housing.

Add "S" to part number for tube shield base riveted to top of can. Add "H" for bail. If staked terminals are desired, add "A", and indicate on the Unit Planning Sheet both type of terminal and the hole pattern in which they are to be staked.

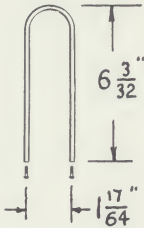
Specify the Alden "11" Non-Interchangeable socket separately, it is not part of the package. Ordering information will be found on Page 8B, Sect. PI.





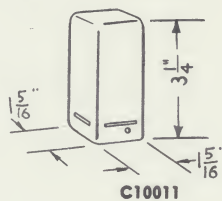
TERMINAL MOUNTING CARD
650-11-1 for Alden "11" Type Plug-in Packages

XXP natural phenolic - $1 \frac{3}{16}$ " x $2 \frac{5}{8}$ " with 35 .101" diameter holes on $\frac{1}{4}$ " centers. Secures to base with mounting brackets BR-5 or molded card boss.



BAIL
H 10011-2A

Complete with 2 screws

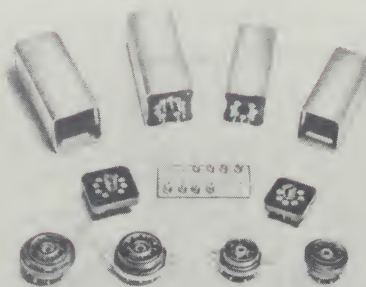


HOUSING
C 10011

To completely shield and protect plug-in kits, good-looking seamless aluminum housings are available. They are easily attached either by crimping over the base, or by #2-56 screws.

ALDEN MIN "7"x"9" PLUG-IN PACKAGE COMPONENTS

Miniature and sub-miniature circuits, potted circuits, and miniaturized components can easily be made compact, sturdy plug-in units with the Alden 7 and 9 Pin Series Miniature Plug-in Bases and Sockets. Your circuits, wired using the Alden Terminal Card Mounting System mounted on the miniature bases become complete miniature assemblies....fit into production assembly methods, completely shielded where necessary, and easily replaceable for repairs. Potted circuit assemblies bond firmly to Alden miniature bases giving exact pin layout with a minimum of fussing.

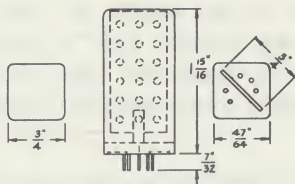


ALDEN MIN PLUG-IN PACKAGES

10,007Q-1TC SINGLE CARD NO TUBE SOCKET

Standard package has (1) terminal card #650-7-1, (8) unstaked miniature terminals #652T, (1) Alden miniature 7 pin base 907MIBQ-1.

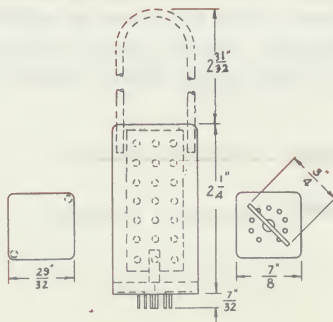
If staked terminals are desired, add "A" to part number and indicate on the Unit Planning Sheet the type of terminal and hole pattern in which they are to be staked.



10,009Q-1TC SINGLE CARD NO TUBE SOCKET

Standard package has (1) terminal card #650-9-1, (8) unstaked miniature terminals #652T, (1) Alden miniature 9 pin base 909MIBQ-1, (1) housing.

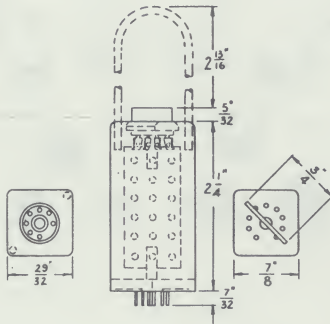
Add "H" to part number for bail. If staked terminals are desired, add "A" to part number and indicate on the Unit Planning Sheet the type of terminal and hole pattern in which they are to be staked.



ALDEN PRODUCTS COMPANY **9A**
PI

SPECIFICATIONS

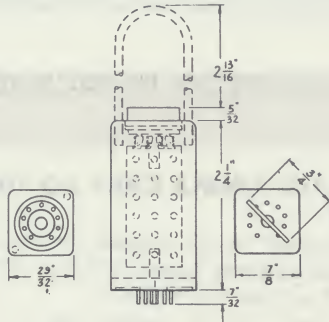
10,009Q-1T-7C MINIATURE 7 PIN SOCKET ON SINGLE CARD



Standard package has (1) terminal card #650-7-1, (8) unstaked miniature terminals #652T, (1) 7 pin miniature socket, (1) Alden 9 pin miniature base 909MIBQ-1, (1) housing.

Add "H" to part number for bail. If staked terminals are desired, add "A", and indicate on Unit Planning Sheet the type of terminal and hole pattern in which they are to be staked.

10,009Q-1T-9C MINIATURE 9 PIN SOCKET ON SINGLE CARD

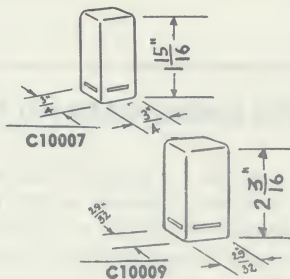


Standard package has (1) terminal card #650-7-1, (8) unstaked miniature terminals #652T, (1) 9 pin miniature socket, (1) Alden 9 pin miniature base 909MIBQ-1, (1) housing.

Add "H" to part number for bail. If staked terminals are desired, add "A", and indicate on Unit Planning Sheet the type of terminal and hole pattern in which they are to be staked.

HOUSINGS

To completely shield and protect the small plug-in units, substantial, seamless aluminum housings are available. They can be easily crimped over the base.



C 10007 for square 7 pin bases.

C 10009 for square 9 pin bases.

SPECIFICATIONS

TERMINAL MOUNTING CARDS



650-7-1

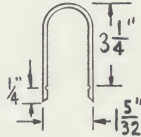


650-9-1

XXP natural phenolic with .101" diameter holes on 1/4" centers. Card mounts on molded boss or brass stud of bases.

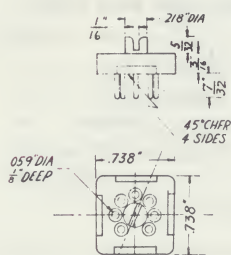
Use card #650-7-1 for 7 pin plug-in packages or 9 pin type with tube socket in top. Measures 1-19/32" x 3/4", has 18 terminal holes.

Use card #650-9-1 for 9 pin plug-in packages without tube socket in top. Measures 1-27/32" x 3/4", has 21 terminal holes.



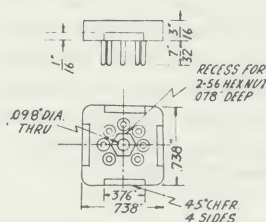
BAIL

For "9" type plug-in packages only.



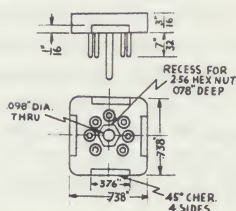
907MIBQ Min. 7 Pin Sq. Base with Card Mtg. Boss

A standard miniature 7 pin layout in a square base. Center boss for easy mounting of Alden Terminal Card. 3/4" square can mount by crimping aluminum over four indentations on molding. Standard base molded in general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Pins are silver plated brass.



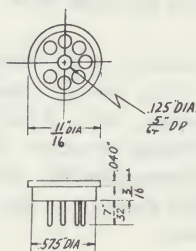
907MIBQ-1 Min. 7 Pin Sq. Base with Center Hole

A standard miniature 7 pin layout in a square base with .098" diameter center hole for stud or screw and hexagonal nut for mounting units to base. 3/4" square housing mounts by crimping aluminum over four indentations on molding. Standard base molded in general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Pins are silver plated brass.



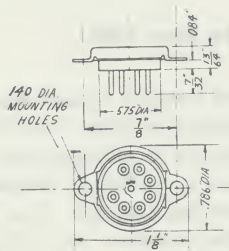
907MIBQ-2 Min. 7 Pin Sq. Base with Center Locating Pin

Here is standard Alden miniature 7 pin with easy locating center pin for guiding base for rotation to insertion position into socket. Also, if needed, the extra pin can carry high voltage or current. Standard base molded in general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Pins are silver plated brass.

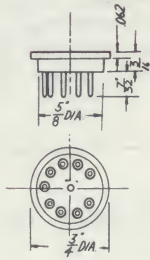


907MIB Min. 7 Pin Round Base

Alden standard miniature 7 pin layout in a round base. Ideal for potted circuits. Housing crimped or spun over 1/16" molded ridge. Standard base molded in general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Pins are silver plated brass. Center hole for mounting stud can be supplied when specified.

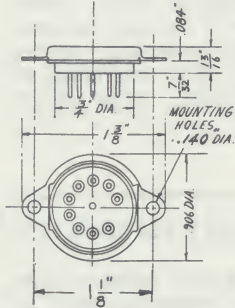


909 MIB Min. 9 Pin Round Base



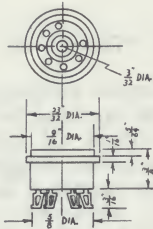
Alden standard miniature 9 pin layout in a round base. Ideal for potted circuits. Housing crimped or spun over 1/16" molded ridge. Center hole for mounting stud can be supplied when specified. Standard base molded in general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Pins are silver plated brass.

909P Min. 9 Pin Round Base with Mtg. Plate



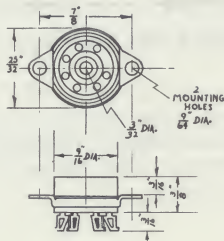
Alden standard miniature 9 pin base with metal mounting plate. Rivets or eyelets to your plug-in units with regular production assembly tools. Standard base molded in general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Pins are silver plated brass. Metal mounting plate of cadmium plated cold rolled steel.

407 Min. 7 Pin Socket

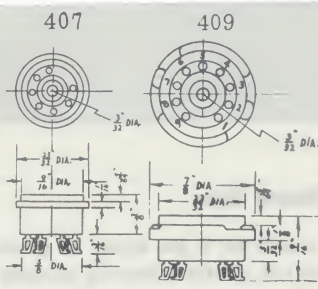


Standard Alden miniature 7 pin socket designed for button mounting.....takes absolute minimum of space. Rugged clips with floating action retain their life over thousands of insertions. Accessible solder terminals for easy soldering. Standard socket molded of general purpose phenolic. Also available in black mica filled phenolic or NA-AX100. Clips are tin plated beryllium copper.

407P Min. 7 Pin Socket with Mtg. Plate

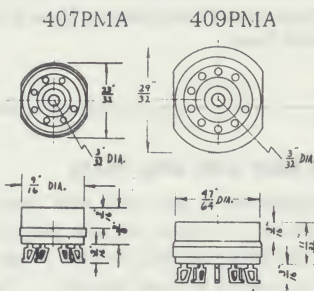


Standard miniature 7 pin socket with metal mounting plate. Mounts from beneath surface -- has high top for mounting through thick surfaces. Rivets or eyelets to chassis using standard assembly tools. Rugged clips with floating action insure easy insertion and good retention. Accessible solder terminals for easy soldering. Standard socket molded of general purpose phenolic. Also available in black mica filled phenolic or NA-AX100. Clips are tin plated beryllium copper.



MIN. 7 AND 9 PIN SOCKET

Standard Alden miniature socket designed for button mounting...takes absolute minimum of space. Rugged clips with floating action retain their life over thousands of insertions. Accessible solder terminals for easy soldering. Standard socket molded of general purpose phenolic. Also available in black mica filled phenolic or NA-AX100. Clips are tin plated beryllium copper.



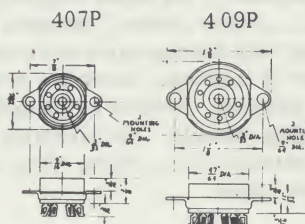
MIN. 7 AND 9 PIN SOCKET WITH HIGH TOP MOLDING

Standard Alden miniature sockets with high top molding. Ideal for mounting in plug-in units, using mounting stud. Rugged clips with floating action. Accessible solder terminals for easy soldering. Molded of general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Clips are tin plated beryllium copper.

MIN. HIGH TOP LOW COST 7 AND 9 PIN SOCKETS

407MIN 409MIN

Simple 1 piece phenolic molding with stake-in type contacts of tinned brass for use where economy is needed.



MIN. 7 AND 9 PIN SOCKET WITH MTG. PLATE

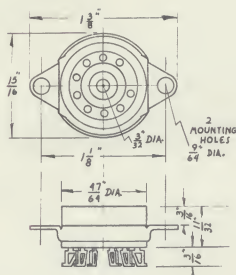
Standard miniature socket with metal mounting plate. Mounts from beneath surface--has high top for mounting through thick surfaces. Rivets or eyelets to chassis using standard assembly tools. Rugged clips with floating action insure easy insertion and good retention. Accessible solder terminals for easy soldering. Standard socket molded of general purpose phenolic. Also available in black mica filled phenolic or NA-AX100. Clips are tin plated beryllium copper.

MINIATURE LOW COST 7 AND 9 PIN SOCKETS WITH MOUNTING PLATE

407MINP 409MINP

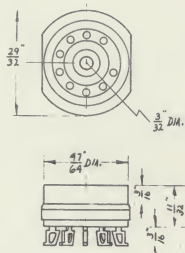
1 piece phenolic molding with stake-in type contacts of tinned brass. Mounts from beneath surface with rivets or eyelets. This is our economy version of the 407P and 409P socket shown above.

SPECIFICATIONS



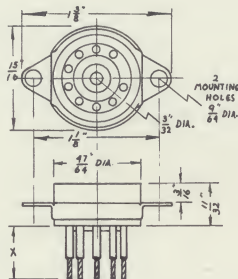
409 P Min. 9 Pin Socket with Mtg. Plate

Standard miniature 9 pin socket with metal mounting plate. Rivets or eyelets to chassis using standard production assembly tools. Rugged clips with floating action insure easy insertion and good retention. Accessible solder terminals for easy soldering. Standard socket molded of general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Clips are tin plated beryllium copper.



409PMA Min. 9 Pin Socket with High Top Molding

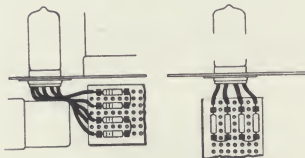
Standard Alden miniature 9 pin socket with high top molding. Ideal for mounting in plug-in units, using mounting stud. Rugged clips with floating action. Accessible solder terminals for easy soldering. Molded of general purpose phenolic. Also available in black mica filled phenolic NA-AX100. Clips are tin plated beryllium copper.



409 PC Min. 9 Pin Chassis Mounting Pigtail Socket

Speeds wiring of chassis mounted sockets to terminal cards or other circuit components by providing leads. Contacts are tin plated beryllium copper.

Leads -- available tailored to your specs, but for lowest cost specify Standard #APW 906-22S, #22 solid tinned, 4" long, tinned 3/8". Specify "X". Molding is general purpose black phenolic -- also available in black mica filled phenolic Alden NA-AX-100.



ALDEN PRODUCTS COMPANY

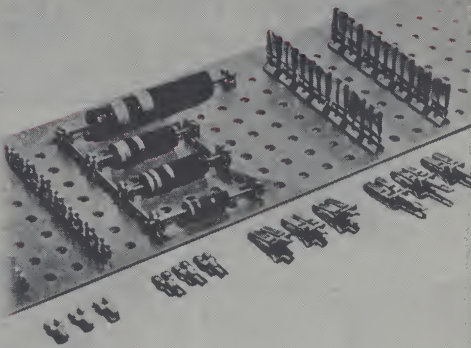
9H
PI

650 SERIES

Here are miniature solder terminals based on an entirely new design principle that really put soldering on a production basis.

The unique punch press configuration holds component leads for soldering without necessity of twisting with pliers. Saves Time--Components snap in. Saves Material--only a minimum of soldering necessary. Saves Space--heat is dissipated quickly in terminal; therefore permits use of short space conserving leads.

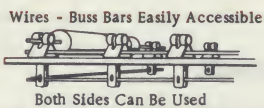
Developed on a Navy miniaturization contract to speed production and save space, these new terminals make it possible to secure multiple leads with a minimum of effort, and, at the same time, obtain a finished product that is neat, compact and easily accessible for test or removal.



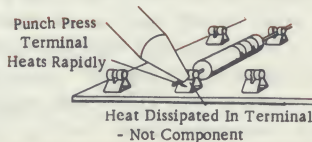
DESIGN FEATURES



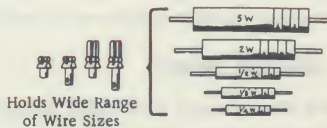
Components Snap or Push Into Alden terminal and are held for soldering. Leads don't have to be twisted and wrapped with pliers. Puts soldering on a production basis.



Buss Bars and Cross Wires Solder with Ease
On the feed-through types, both sides of terminal can be used to keep complicated assemblies from becoming a maze.



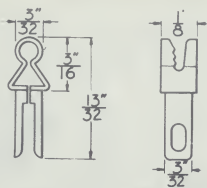
Alden Terminals are Punch Press Parts
Come to soldering temperature rapidly. Heat is quickly dissipated in terminal and not in component--permits use of short space saving leads with less danger of heat damaging components.



Wide Range of Component Wire Sizes can be accommodated. Terminals eyelet to mounting board, space components away from mounting board and hold them solidly for soldering.

ALDEN PRODUCTS COMPANY

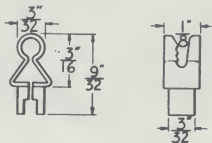
10A
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651T MIN. DOUBLE END FEED THROUGH



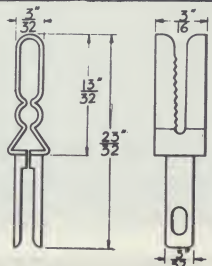
Takes leads up to and including 18 gage. Recommended for 1/4 and 1/2 watt resistors. 1/16" mounting board recommended. Material is tin plated brass. Terminal mounting hole .101" or #38 drill.



652T MIN. SINGLE END



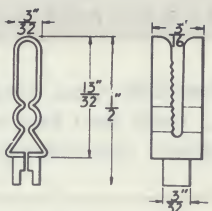
Takes leads up to and including 18 gage. Recommended for 1/4 and 1/2 watt resistors. 1/16" mounting board recommended. Material is tin plated brass. Terminal mounting hole .101" or #38 drill.



653T DOUBLE END RATCHET ACTION FEED THROUGH



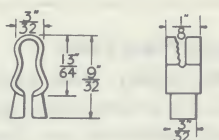
Takes leads up to and including 18 gage. Will accommodate up to 2 watt resistor without depressing leads. Ratchet action holds component from mounting board. 1/16" mounting board recommended. Material is tin plated brass. Terminal mounting hole .101" or #38 drill.



654T SINGLE END RATCHET ACTION



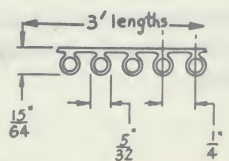
Takes leads up to and including 18 gage. Will accommodate up to 2 watt resistor without depressing leads. Ratchet action holds component from mounting board. 1/16" mounting board recommended. Material is tin plated brass. Terminal mounting hole .101" or #38 drill.



652DT DIODE TERMINAL



Here is a miniature terminal for mounting diodes and other components with small wire leads #22-#25 AWG. Leads merely snap in, are held securely by ratchet action. Can be soldered if required--terminal takes solder fast and dissipates heat rapidly. Material is electro-tinned brass. Mounting hole .101" (#38 drill) in 1/16" board. To mount, use Alden Diode Staking Tool #TLRS11-1.

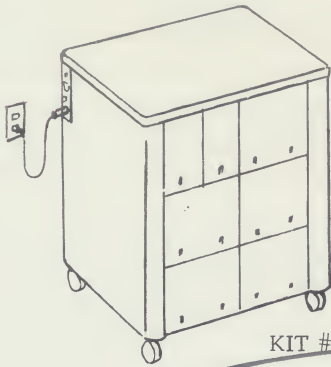


650J TERMINAL JUMPER STRIP



This tinned brass jumper eliminates wiring between Alden Miniature Terminals. Makes common connections when staked in under miniature terminal. Furnished in 3 ft. strips. Specify quantity.

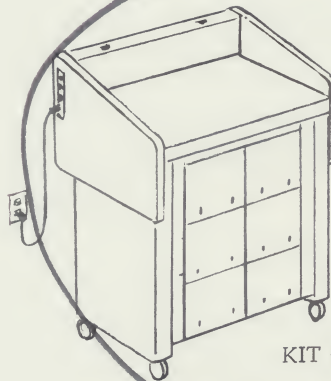
**COMPLETE KITS TO MOUNT, HOUSE, FASTEN, CONNECT & MONITOR
ELECTRONIC CIRCUITRY**



KIT #47

**UNDERBENCH UNIT FOR ELECTRONIC
MEASURING AND CONTROL**

Solves problems of circuit packaging, operation and servicing under benches like the Alden Work Center for a standardized approach to work simplification and automation. Simply roll into place and plug-in for immediate operation. All interconnecting leads are neatly enclosed within the ALDEN INTERCHASSIS CONNECTING SYSTEM to provide shielding and protection from contamination. Back Connectors bring all inputs/outputs and interchassis connections to POINT OF CHECK for simplified maintainability. Alden slide-in chassis hold downtime to 30 seconds replacement of malfunction.



KIT #48

**ROLL-IN ELECTRONICS CENTER FOR
ON-THE-SPOT USE**

Solves problem of finding top space for test and measuring instruments at point-of-use. With this self-contained, roll-in unit you can have modular interchangeable circuit functions below and readout or control elements on top. All the elements of the Alden Unit Construction System and the INTERCHASSIS CONNECTING SYSTEM help you package equipment at lowest cost to ship intact, roll to point-of-use and plug-in for immediate operation.



KIT #49

**HI-LEVEL ENCLOSURE FOR ELECTRONIC
SYSTEMS**

Solves problem of maintaining and servicing equipment from front. Eight levels of modular slide-in chassis with complete INTERCHASSIS CONNECTING SYSTEM gives flexibility for interchangeable electronic functions. Pre-engineered air flow with chimney effect eliminates need for side louvers which are ineffective when enclosures are placed side by side. Back Connectors provide a pictorial Point of Check for all pertinent circuit function and test data to cut malfunction tracing, testing and repairing as much as 50% even from front of equipment.

ALDEN TERMINAL MOUNTING CARDS

Pat. Pending

Now with standard Alden Terminal Mounting Cards you can have tremendous flexibility for laying out and wiring an infinite number of circuit variations.

These rugged terminal cards come with pre-punched grids (25 holes per square inch) into which the Alden 650 Series Miniature Terminals easily stake. Both sides of the card can be used so it is easy to select optimum terminal pattern for the most efficient circuit wiring.



SPECIFICATIONS

* 650ATMS Terminal Cards in Varied Lengths



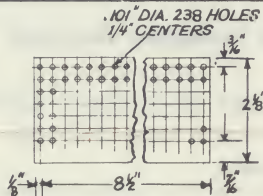
Here are terminal card strips you can order to any length up to 3 feet. .101" diameter holes are pre-punched in 7 rows on 1/4" centers in the XXP natural phenolic. These cards have wide flexibility and many uses.

* 650ATMS-1 for Mounting in Chassis



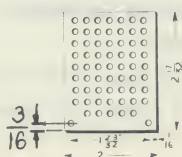
XXP natural phenolic - 2-1/8" x 8-1/2" with 238 holes .101" pre-punched in 7 rows on 1/4" centers. This card can be secured to the chassis with Hold Down Track, mounting plate, sockets or brackets.

* 650ATMS-1-SS1



Boards silk screened front and back with the vertical holes, lettered A-G and the horizontal holes numbered 1-34. Establishes accurate location of components for assembly and servicing.

* 650-20-1 for Single Card Alden "20" Type Plug-in Packages



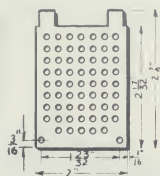
XXP natural phenolic - 2 x 2-17/32" with 61 holes .101" diameter pre-punched in 9 rows on 1/4" centers. This card can be secured with mounting brackets or molded card boss on Alden "20" Socket.

*For glass epoxy add G10 after part numbers.

ALDEN PRODUCTS COMPANY

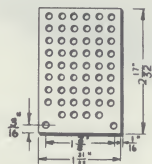
**12A
PI**

650-20-3 for Single Card-Single Tube Socket Alden "20" Type Open Plug-in Packages



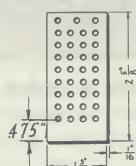
The ears fit in slots on top row of kit and hold card rigidly. XXP natural phenolic 2 x 2-7/8" with 61 holes .101" diameter pre-punched in 9 rows on 1/4" centers. This card can be secured with mounting brackets or molded card boss on Alden "20" socket.

650-20-2 for Double Card Alden "20" Type Plug-in Packages

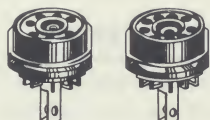


XXP natural phenolic - 1-21/32" x 2-17/32" with 52 holes .101" diameter pre-punched in 9 rows on 1/4" centers. This card can be secured with mounting brackets or molded card boss on Alden "20" Socket.

650-11-1 for Alden "11" Type Plug-in Packages



XXP natural phenolic - 1-3/16" x 2-5/8" with 35 holes .101" diameter on 1/4" centers. This card can be secured with mounting brackets or molded card boss on Alden "11" Socket.



407/9 SMA Series 7 and 9 Pin Tube Sockets with Mounting Stud

These miniature tube sockets are complete with studs and eyelets for easy mounting on terminal cards.



BR-10 Bracket for Mounting Terminal Card in Chassis

Right angle bracket with #6-32 tapped hole for screwing into chassis and 8 holes .101" dia. for fastening terminal board.

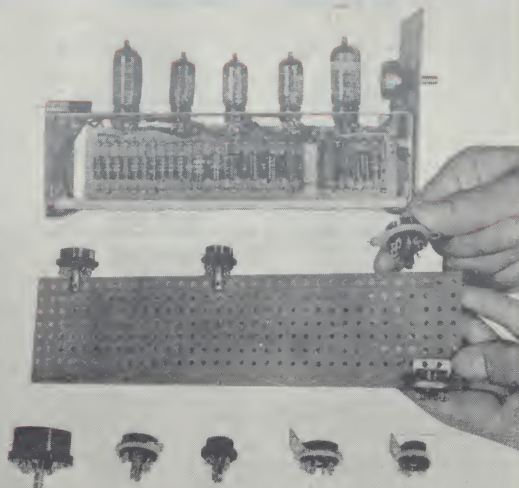


BR-5 Bracket for Mounting Terminal Card on Alden "20" Base

Right angle bracket with 2 holes .136" dia. for mounting terminal card to Alden "20" Base.

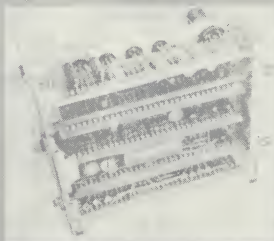
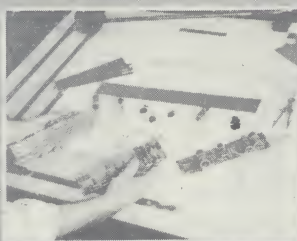
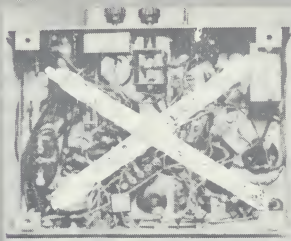
ALDEN TERMINAL CARD MOUNTING SOCKETS

Now, for the first time with Alden Card Mounting Sockets you can integrate your circuitry in the same plane as your tubes, plug-ins and other top chassis components. These sockets mount directly to your terminal cards to provide a compact single plane of circuitry that snap, plug, or bracket mounts--replacing point to point chassis wiring with efficient, unit sub-assembly methods and giving you circuits organized function by function that mount in orderly parallel planes -- that take a very minimum of space, yet provide unblocked air flow paths for efficient heat dissipation --and give easy accessibility for quick checks and servicing.



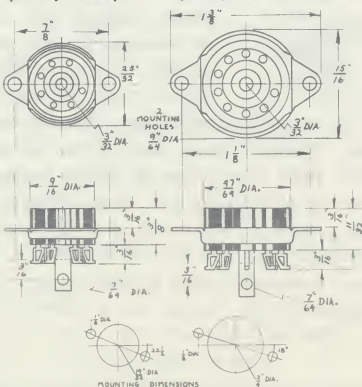
TERMINAL CARD MOUNTING SOCKETS ALLOW YOU TO:

Eliminate point to point chassis wiring Make your circuiting complete unit sub-assemblies Package as compact vertical planes

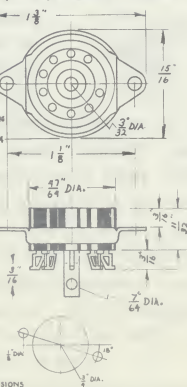


MINIATURE SOCKETS

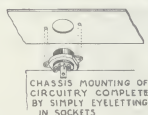
407SPA
(for 7 pin min.)



409SPA
(for 9 pin min.)



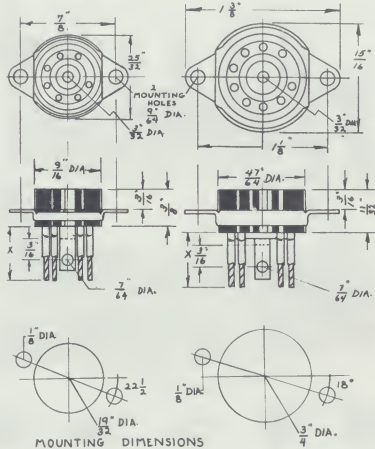
Alden Piggy Back Sockets For Min. Tubes



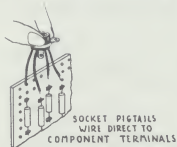
With Alden "piggy backs" your sub-chassis layout becomes a sub-assembly with your tube sockets an integral part of your terminal card circuitry which is carried "piggy back" beneath your chassis. Each socket has a split tubular center shield with legs that simply straddle and eyelet to the edge of your terminal card. Your complete assembly is held "piggy back" by the socket saddle eyeleted to your chassis. Standard is black phenolic--also available in Plaskon Alkyd. Clips are tinned beryllium copper. Eyelet furnished. Stud takes 1/16" card.

407SPAC
(for 7 pin min.)

409SPAC
(for 9 pin min.)



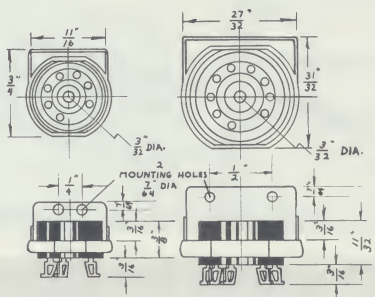
Alden Piggy Back Pigtail Sockets For Min. Tubes



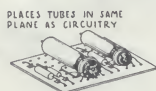
Here are Alden "pigtail piggy backs" with leads. Makes your sub-chassis layout a simple sub-assembly with your tube sockets an integral part of your terminal card circuitry which is carried "piggy back" beneath your chassis. Prepared leads can be one-shot soldered to terminal card connections or dropped into printed wiring holes for fast dip-soldering. Each socket has leads and a split tubular center shield with legs that simply straddle and eyelet to the edge of your terminal card. Your complete assembly is held "piggy back" by the socket saddle eyeleted to your chassis. Standard is black phenolic--also available in Plaskon Alkyd. Leads are APW906-22S, #22 solid, 1/64" wall of polyvinyl, "X" length 4", dipped 3/8"; also available with leads to your specs. Clips are tinned beryllium copper. Eyelet furnished. Stud takes 1/16" card.

407BMA
(for 7 pin min.)

409BMA
(for 9 pin min.)



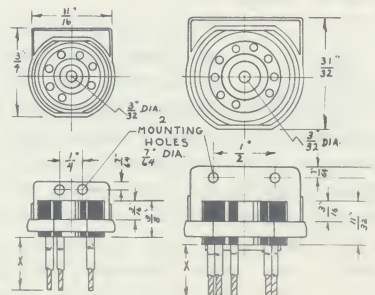
Alden Side Saddle Sockets For Min. Tubes



Now you can orientate your tubes parallel to chassis, panel, terminal or printed circuit boards by using Alden "side saddle" sockets that mount at right angles to these surfaces. Each socket has a right angle mounting plate that simply eyelets to mounting surface, eliminating need for punching socket holes. Standard is black phenolic; also available in Plaskon Alkyd. Clips are tinned beryllium copper. Eyelet furnished.

407BMAC
(for 7 pin min.)

409BMAC
(for 9 pin min.)



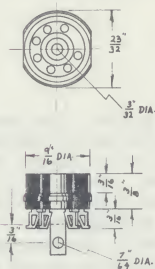
Alden Side Saddle Pigtail Sockets For Min. Tubes



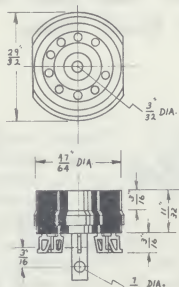
Alden "pigtail side saddles" are mounted at right angles to chassis, panel, terminal, or printed circuit boards to save space by mounting tubes in same plane as mounting surface. Prepared leads are one-shot soldered to terminal card connections or simply dropped into printed wiring holes for fast float soldering. Each socket has leads and a right angle mounting plate that simply eyelets to any surface. Standard is black phenolic; also available in Plaskon Alkyd. Leads are APW906-22S, #22 solid, 1/64" polyvinyl wall, "X" length 4", dipped 3/8". Also available with leads to your specs. Clips are tinned beryllium copper. Eyelet furnished.

12D
PI

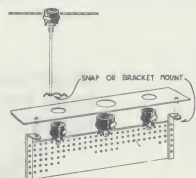
407SMA
(for 7 pin min.)



409SMA
(for 9 pin min.)



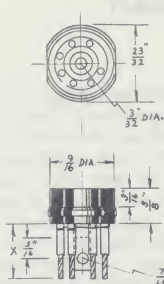
Alden Bare Back Sockets For Min. Tubes



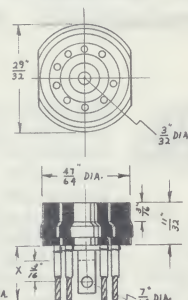
Complete unit sub-assemblies are easy with Alden "bare backs" that mount directly to edge of your terminal card. Completed assemblies then bracket or snap-mount as compact units into protective chassis or housings.

Each socket has a split tubular center shield with legs that simply straddle and eyelet to the edge of your terminal card. Socket position is maintained by inserting into socket holes in protective housing. Standard is black phenolic; also available in Plaskon Alkyd. Clips are tinned beryllium copper. Eyelet furnished. Stud takes 1/16" card.

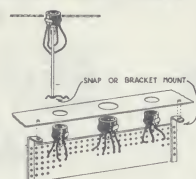
407SMAC
(for 7 pin min.)



409SMAC
(for 9 pin min.)



Alden Bare Back Pigtail Sockets For Min. Tubes



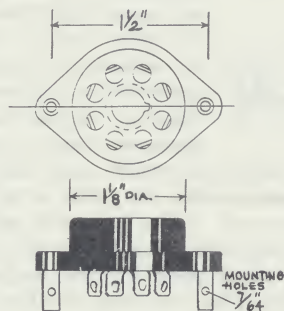
Here are Alden "pigtail bare backs" that simplify terminal card sub-assembly construction and speed wiring. Socket mounts to edge of terminal card and leads are "one shot" soldered to terminals or dropped

into printed wiring holes for fast dipsoldering. Completed assemblies bracket or snap-mount as compact units into protective housings or chassis--with tube sockets positioned by inserting into housing socket holes. Each socket has leads and a split tubular center shield with legs that simply straddle and eyelet to edge of your terminal card. Standard is black phenolic; also available in Plaskon Alkyd. Leads are APW906-22S, #22 solid, 1/64" polyvinyl wall, "X" length 4", dipped 3/8". Also available to customer's specs. Clips are tinned beryllium copper. Eyelet furnished. Stud takes 1/16" card.

STANDARD SOCKETS

408SA

Alden Bare Back Sockets For Octal Tubes



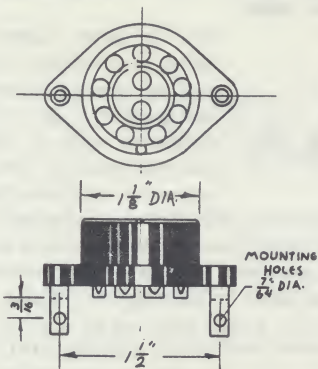
SNAP OR
BRACKET
MOUNT



These octal sockets have split studs which eyelet directly to your terminal card to make it an integral unit with its associated circuitry. Socket mounts up through single hole in chassis--can be held in place by bracket or "snap-in" mounting of its terminal card. Each socket has 2 split tubular studs with legs that simply straddle and eyelet to edge of your terminal card. Standard is black phenolic; also available in Plaskon Alkyd. Contacts are resilient, triangular shaped, tinned brass. Eyelets furnished. Studs take 1/16" card.

400-11 SMA

Alden Bare Back 11 Pin Non- Interchangeable Socket



SNAP OR
BRACKET
MOUNT



Use with bases and plugs on Alden Handbook pages 8A/PI-8E/PI, as a receptacle for plug-in units or cable connections to your terminal cards. Each socket has two split mounting studs with legs that simply straddle and eyelet to the edge of your terminal card. Standard is black phenolic--also available in Plaskon Alkyd. Clips are tinned beryllium copper. Eyelets furnished. Studs take 1/16" card. Available in volume with non-interchangeable contact layouts listed below.

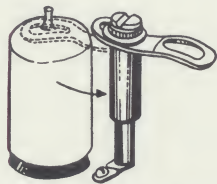
CHART FOR RECOMMENDED STANDARD CONTACT LAYOUT

No. of Contacts	Part No.	Contact Positions Used	No. of Contacts	Part No.	Contact Positions Used
11	400-11SMA	1 2 3 4 5 6 7 8 9 10 11	6	400-61SMA	- 2 3 - 5 6 7 - - 11
10	400-10 "	1 - 3 4 5 6 7 8 9 10 11	6	400-62 "	- 2 - 4 5 6 7 8 - -
9	400-9 "	1 2 - 4 5 6 - 8 9 10 11	6	400-63 "	1 2 - 4 5 6 7 - - -
9	400-91 "	1 2 3 4 5 6 - 8 9 10 -	6	400-64 "	- 2 - 4 5 6 7 - 9 -
8	400-8 "	- 2 3 - 5 6 7 8 9 10 -	6	400-65 "	1 - 3 4 5 - - - 10 11
8	400-81 "	1 2 - 4 - 6 7 - 9 10 11	5	400-5 "	- 2 3 4 - - - 8 9 -
7	400-7 "	1 2 - 4 - 6 - 8 - 10 11	4	400-4 "	- 2 - 4 - - - 8 - 11
7	400-71 "	1 2 - 4 - 6 - 8 9 - 11	4	400-41 "	1 - 3 4 - - - - 11
7	400-72 "	1 2 - 4 5 6 - 8 - - 11	3	400-3 "	1 - - 4 - - - 8 - -
7	400-73 "	1 2 - 4 5 - 7 8 - - 11	2	400-2 "	1 - 3 - - - - - -
6	400-6 "	- 2 - - 5 6 7 - - 10 11	For quantity runs other contact layouts can be specified.		

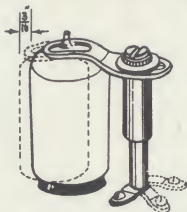
ALDEN TUBE CLAMPS

320 Series Tube Clamps for 7 and 9 Pin Miniature Glass Receiving & Transmitting Tubes.

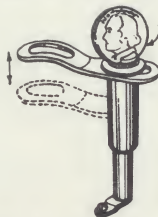
Developed as a more reliable means of protecting tubes, mounted on replacement chassis, during transit--it has also proved to be far more flexible than previous designs. This completely engineered component is spring loaded to allow for variations in tube height and to assure proper tension at all times--no danger of broken or damaged tubes from undue pressure under shock.



Tube may be removed without removing tube clamp. Simply lift up cap and swing out of the way.



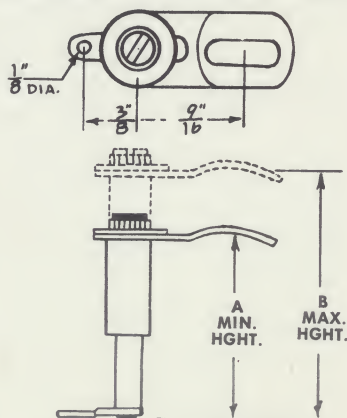
Slotted holes in cap and swivel base eliminate need for critical location of clamp. Cap has $\frac{3}{16}$ " travel in either direction.



Cap has $\frac{3}{16}$ " travel up or down. Alden target screw with knurled concave head permits easy adjustment by hand, coin or screw driver.

Simple one hole mounting with eyelet or screw takes minimum of space...

PART NUMBERS	APPLICATIONS	DIM. A	DIM. B
320-MIN-6	for $1\frac{1}{8}$ high tubes	1"	$1\frac{3}{8}$ "
320-MIN-9	for $1\frac{1}{2}$ high tubes	$1\frac{3}{8}$ "	$1\frac{3}{4}$ "
320-MIN-13	for 2" high tubes	$1\frac{7}{8}$ "	$2\frac{1}{4}$ "



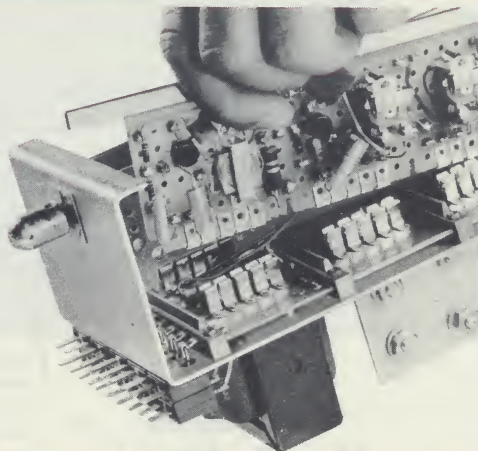
SPECIFICATIONS

Clamp Cap is stainless steel spring tempered for added resiliency. Sleeve is cadmium plated brass--Stud and base cadmium plated cold rolled steel. Alden S. S. Target Screw with wide slot uses knurled concave head.

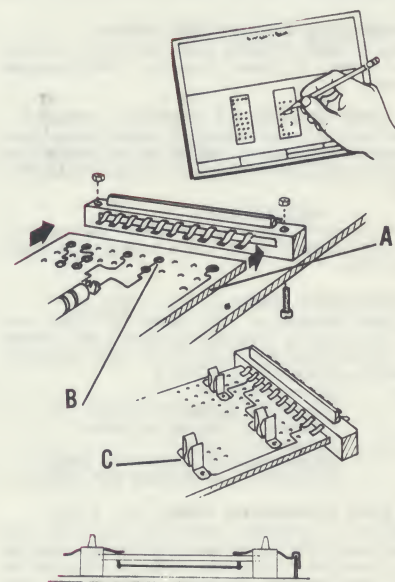
ALDEN PRODUCTS COMPANY BROCKTON MASS.

12G
PI

This unique method of mounting terminal card modules in Alden Basic Chassis permits solderless interconnections and true plug-in/snap-out circuit planes. Crossover connector blocks mount to underside of chassis and hold circuit cards which carry all interconnections between terminal cards and chassis-mounted components to a single point for input/output at back connections. Circuits may be printed, etched, conventionally wired or combinations of each for maximum flexibility in all phases of design and manufacture. The Alden Crossover System in Alden Basic Chassis provide the optimum in fast, easy assembly rapid servicing and easy maintenance.



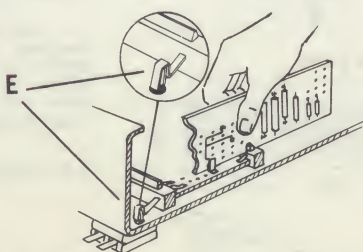
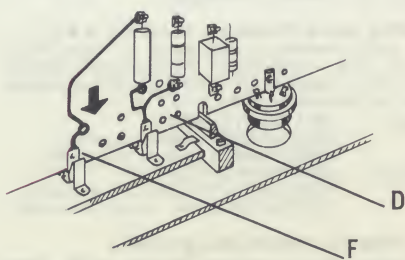
HOW THE ALDEN CROSSOVER SYSTEM WORKS



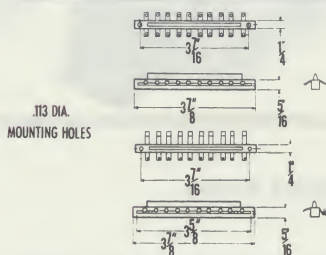
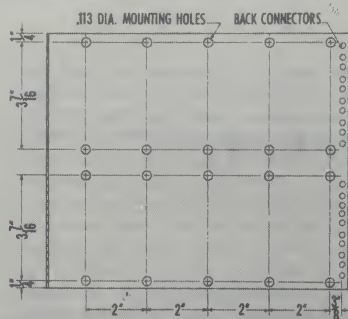
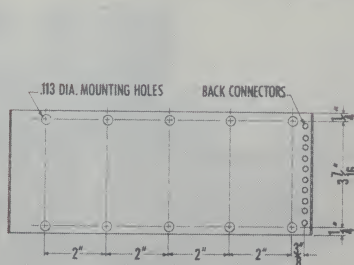
1. Simply layout your terminal card and crossover card circuitry on Alden full-scale planning sheets.
2. Use either printed circuit or conventional wiring techniques . . . for crossover cards (A) use eyelets to terminate circuits at crossover blocks (B) and include crossover connectors (C) as required to bring connections from terminal cards (D).
3. Punch or drill holes in chassis as required for crossover blocks and tube sockets. Fasten rear crossover block to chassis and snap onto back connector terminals (E).
4. Insert crossover card into slot of next crossover block and then into block already fastened to chassis. Continue in this manner until all cards and blocks are mounted.
5. Mount terminal card components and eyelet crossover contacts (F) to terminate circuits at plug-in points for crossover connections.

NOTE: Crossover cards are necessary only as needed to carry required interconnections between terminal cards and back connectors. You can wire directly from crossover block terminals to any chassis or front panel mounted component. Half-size crossover cards may be used to provide clearance for tube sockets.

Once the vertical card modules are in position, a track is snapped into place to hold them securely and makes the card extremely rigid.



HOLE DIM. FOR LOCATING CROSSOVER BLOCKS ON 4" AND 8" CHASSIS



CROSSOVER BLOCK (INTER-CARD CONNECTOR) #461-1A

Molded in blue nylon with 10 feed-through contacts — phosphor bronze electroplated — for connecting crossover cards to each other or to chassis-mounted components. Complete with mounting hardware.

BACK CONNECTOR CROSSOVER BLOCK (CARD TO BACK CONNECTORS) #461-2A

Molded in yellow nylon with 10 feed-through contacts — phosphor bronze, electroplated — for connecting crossover cards to back connector terminals. Complete with mounting hardware.

CROSSOVER CONNECTOR #CS461

Eyelets to crossover card to make solderless interconnection with crossover contact on main terminal. Electroplated phosphor bronze.

TERMINAL CARD CROSSOVER CONTACT #CS461-3
Eyelets to main terminal card module to make contact with crossover connector on crossover boards when plugged in. All in/out circuitry is brought to these terminal points. Electroplated brass.

EYELET RS35

Used to mount crossover connector, crossover contact, and as contact pad on crossover cards where mating with crossover block terminals.

CROSSOVER CARD — 1 7/8 x 3 5/8

Available in XXXP Phenolic or glass epoxy 1/8" thick. Pre-punched holes for mounting crossover connectors and contact eyelets. Glass epoxy meets MIL P-18177 type GEE. Available plain, copper clad one side or both (2 oz.)

XXXP Phenolic	650-461 (plain)
	650-461SPC (copper one side)
	650-461DPC (copper both sides)
G-10 Glass Epoxy	650-461-G10 (plain)
	650-461SPC-G10 (copper one side)
	650-461DPC-G10 (copper both sides)

HALF SIZE CROSSOVER CARD 1 7/8 x 1 3/8

Same specifications as crossover card above, but half size. Notch prevents movement in crossover block slot. Use for feed-through connections where tube socket is mounted on adjacent main terminal card. To order, add (1/2) to part numbers of full size crossover card above.

NOTCHED MAIN TERMINAL CARD 8 1/2 x 2 1/8

Available in XXXP phenolic or glass epoxy 1/8" thick. Holes punched on 1/4" grid — notched for positioning on crossover blocks. Glass epoxy meets MIL P-18177 type GEE. Available plain, copper-clad one side or both (2 oz.)

XXXP Phenolic	650ATMS-IN (plain)
	650ATMS-SPCN (copper one side)
	650ATMS-DPCN (copper both sides)
G-10 Glass Epoxy	650ATMS-IN-G10 (plain)
	650ATMS-SPCN-G10 (copper one side)
	650ATMS-DPCN-G10 (copper both sides)

TERMINAL CARD TRACK 11005-1

Track for holding vertical mounted terminal cards firmly in position. Alden Chassis are provided with mounting clips.

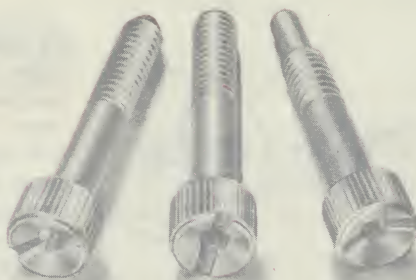
CAP-CAPTIVE CONVENIENCE SCREWS

4600 SERIES

Here's a real convenience screw for the modern designer. In production, the head makes a beautiful target for power tools - concave surface and arced notch quickly center the tool on screw for rapid tightening against lockwasher. In the field, no special tools are necessary - arced slot in head is of such proportion that even a coin gives sufficient leverage to back it off lockwasher.

In inaccessible spots - where screw drivers must be tilted to reach screw - the arced slot will compensate for tilt up to 30° . Can readily be made captive, so it's ideal for holding detachable mechanical units, plug-in housings, and miniature chassis. Can be standard construction wherever modern design principles of accessibility and convenience are paramount.

Pat. Pending

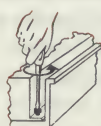


DESIGN FEATURES



EASILY LOOSENED

Designed to be easily loosened by any tool. Slot takes socket wrench, screw driver or coin - knurled head provides sure finger grip for easy turning of screw by hand.



LOCATES TOOL INSTANTLY

In inaccessible locations, concave head surface instantly locates tool into slot for turning. Arc slot centers screw driver, socket wrench or coin to give sufficient leverage to back screw off lockwasher.



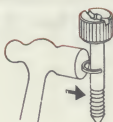
1

2

3

POINTS in THREE STYLES

- 1). Chamfered - for standard fastening, no screw projection. Can replace conventional cap screws.
- 2). Bullet nose - for guiding screw into tapped hole - quicker assembly - easier threading.
- 3). Pilot guide - for easy piloting and locating of plug-in units.



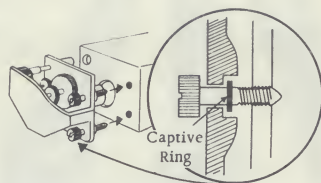
READILY MADE CAPTIVE

Screw can be readily made captive. Closed end captive rings slipped over end of screw to desired position. Open-end captive rings quickly driven across shank into position.

ALDEN PRODUCTS COMPANY

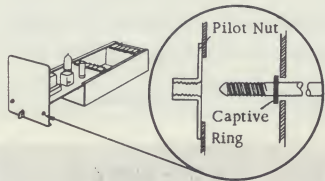
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PI

IN MECHANICAL UNITS



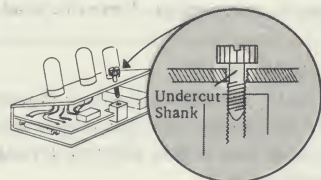
Alden Cap-Captives in mechanical units make sub-assemblies easily replaceable in the field. Here Alden screws - made captive to a gear unit - pilot the unit into main housing. Play of screws makes possible easy meshing of gears. With gears meshed, fingers rapidly turn screw to position for final tightening by coin, socket wrench or screw driver. This unit, then - with less life than that of the equipment - becomes easily replaceable.

IN ELECTRONIC UNITS



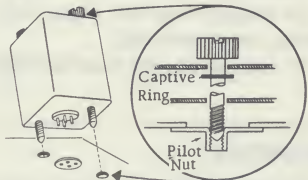
Here's the Cap-Captive screw locking a small slide-in chassis. "Pilot guide" point instantly positions chassis in rack - brings back connectors in alignment. Knurled head provides sure finger grip for easily mating chassis and back connectors securely in rack. Ideal where chassis have conventional back connectors with high insertion force. Any tool - coin, socket wrench, screw driver - guides chassis and prongs smoothly and easily into engagement.

IN ELECTRICAL UNITS



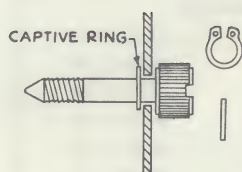
Here the Alden Screw is captive to the ninged cover of a compact electrical unit. The screw holds the cover securely in place. When unit is serviced in the field - any coin, screw driver or socket wrench frees the screw. Capitive - it can't be dropped or lost. Method of servicing becomes more obvious and maintenance easier for untrained operators in the field. (In quantities of 1,000 or more, screws can be supplied with an undercut shank as illustrated).

IN PLUG-IN UNITS



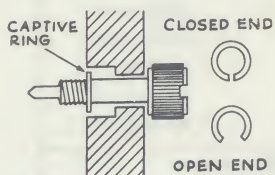
As an integral part of a plug-in unit, the two Cap-Captives instantly locate unit in mounting position. Unit is held securely against all vibration or shock - yet unit can be quickly and easily removed at any instant. Here's the construction you can use where units must be fastened securely - yet have shorter life than that of the equipment or must be interchangeable.

CAPTIVE RINGS



When screw is to be captive in sheet metal, the U-ring is recommended. To assemble - use pointed spring loaded pliers which open when squeezed. Ordinary pointed pliers may be used and the points ground to fit the rings. Insert ring on pliers, open ring, slip over end of screw into position and release ring.

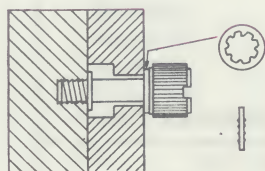
Alden Part No.	For Alden Cap Captive	Max. Ring Clearance	Ring Thickness
4602-1CR	10-32	.406	.035
4600-1CR	1/4-20	.468	.035



Where captive ring is to nest in a casting or where space is limited, a spring type captive ring should be used. To assemble - position captive ring over end of screw and push or turn ring to final position on shank. For supporting weights heavier than the screw itself, such as on electronic plug-in units, a groove may be cut in the shank to accept ring. Open type captive ring permits quick positioning by driving open ring across the screw shank.

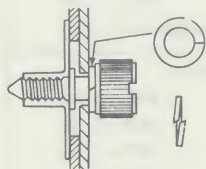
Closed End Part No.	Open End Part No.	For Alden Cap Captive	Ring Thickness	Suggested Groove Size	
4604-2CR	4604-3CR	6-32	.020	.024	.005
4603-2CR	4603-3CR	8-32	.020	.024	.005
4602-2CR	4602-3CR	10-32	.025	.029	.006
4600-2CR	4600-3CR	1/4-20	.031	.036	.008

LOCKWASHERS



Where protection against vibration and locking action are important, such as casting to casting assembly, the internal type lockwasher should be used. Stocked and supplied in carbon steel. Stainless steel available as specials.

Alden Part No.	For Alden Cap Captive	Max. O.D. of Washer	Washer Thickness
L6SI	6-32	.285	.018
L8SI	8-32	.336	.020
L10SI	10-32	.381	.022
L14SI	1/4-20	.478	.025



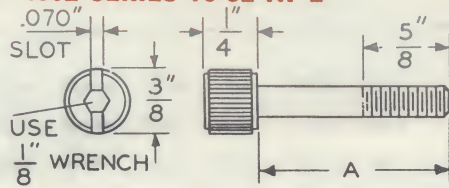
Where strong spring action is required, such as sheet metal to sheet metal assembly, the split type lockwasher is recommended. Stocked and supplied in carbon steel. Stainless steel washers available as specials.

Alden Part No.	For Alden Cap Captive	Section Size
L6W	6-32	.047 x .031
L8W	8-32	.055 x .040
L10W	10-32	.062 x .047
L14W	1/4-20	.109 x .062

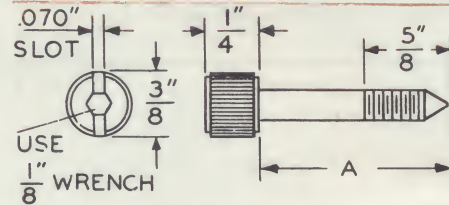
ALDEN PRODUCTS COMPANY

13C
PI

4602 SERIES 10-32 NF-2

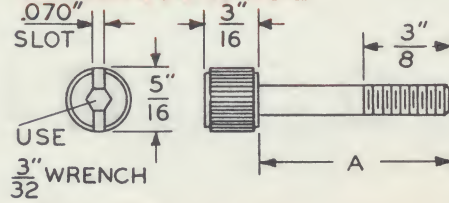


Dim. "A"	Part No.
Chamfered	
3/4"	4602-1-12
1"	4602-1-16
1-1/2"	4602-1-24
2"	4602-1-32
2-1/2"	4602-1-40

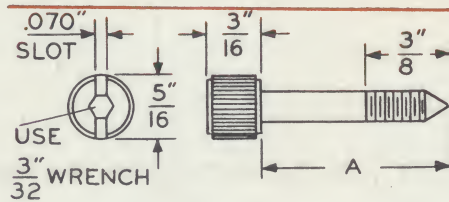


Bullet Nose	
3/4"	4602-2-12
1"	4602-2-16
1-1/2"	4602-2-24
2"	4602-2-32
2-1/2"	4602-2-40

4603 SERIES 8-32 NC-2

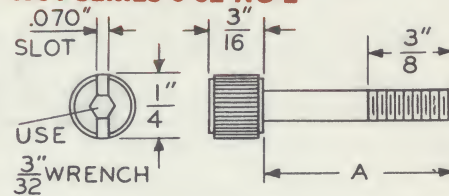


Dim. "A"	Part No.
Chamfered	
1/2"	4603-1-8
3/4"	4603-1-12
1"	4603-1-16
1-1/4"	4603-1-20
1-1/2"	4603-1-24

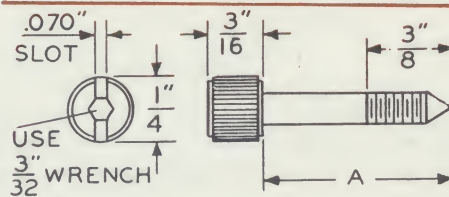


Bullet Nose	
1/2"	4603-2-8
3/4"	4603-2-12
1"	4603-2-16
1-1/4"	4603-2-20
1-1/2"	4603-2-24

4604 SERIES 6-32 NC-2



Dim. "A"	Part No.
Chamfered	
1/2"	4604-1-8
3/4"	4604-1-12
1"	4604-1-16
1-1/4"	4604-1-20
1-1/2"	4604-1-24



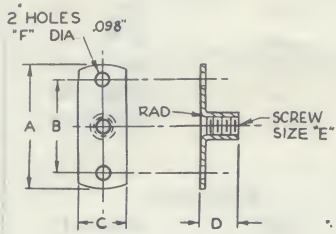
Bullet Nose	
1/2"	4604-2-8
3/4"	4604-2-12
1"	4604-2-16
1-1/4"	4604-2-20
1-1/2"	4604-2-24

Screws are cold rolled steel, cadmium plated.

ALDEN PRODUCTS COMPANY **13E**
PI

SPECIFICATIONS

ALDEN PILOT NUTS



Part No	A	B	C	D	E	F
4610-1	1-1/4"	15/16"	1/2"	13/32"	#1/4-20	.098"
4611-1	1-1/4"	15/16"	1/2"	3/8"	#10-32	.098"
4612-1	3/4"	19/32"	1/2"	1/4"	#8-32	.098"
4613-1	5/8"	7/16"	19/64"	1/4"	#6-32	.086"

TO MOUNT - Weld in position or fasten with screw or rivet.

ALDEN TARGET SCREWS

4600 SERIES

Pat. Pending

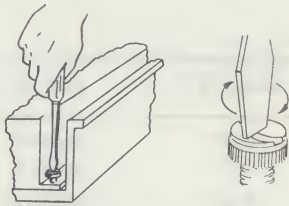
Alden Target Screws immediately center screw driver for fast production assembly. The concave head and arced slot prevent twisted and sheared edges so commonly found in crown type screws. In using the Alden Target Screws, pressure on the screw driver forces it to stay in the arced slot, and the built up edges give strength where it is needed. Finely made, the target screws dress up and give a finished look to all equipment. As a convenience feature, any coin up to and including a half dollar will give sufficient leverage to loosen and back off screw.



DESIGN FEATURES

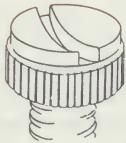
IDEAL SCREW FOR FAST PRODUCTION

For simple rapid assembly by power screw driver, concave surface of head instantly locates tool and depth of slot holds it securely. In inaccessible spots, concave head surface quickly locates tool in slot for turning.



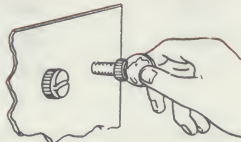
STRONG AND DURABLE FOR LONG LIFE

Strength of the head is on the edges where needed... The high shoulders prevent twisting or shearing when pressure is applied.



NO SPECIAL TOOLS NECESSARY

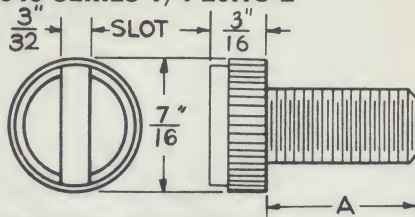
Designed to be loosened by screw driver or coin, slot takes coin and will give leverage to back screw off. Knurled head provides easy finger grip for turning.



ALDEN PRODUCTS COMPANY $\frac{14A}{PI}$

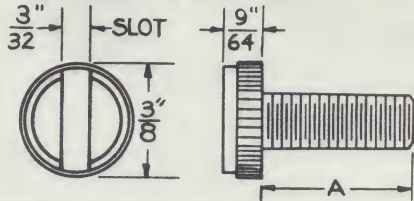
SPECIFICATIONS

4640 SERIES 1/4-20NC-2



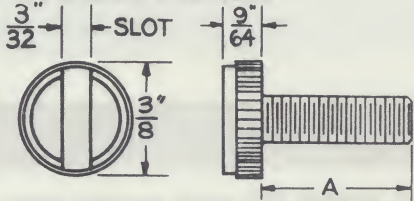
Dim. "A"	Part No.
3/8"	4640-6
1/2"	4640-8
3/4"	4640-12
1"	4640-16

4652 SERIES 10-32NF-2



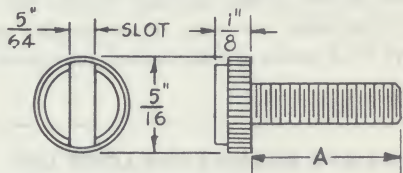
Dim. "A"	Part No.
3/8"	4652-6
1/2"	4652-8
3/4"	4652-12
1"	4652-16

4653 SERIES 8-32NC-2



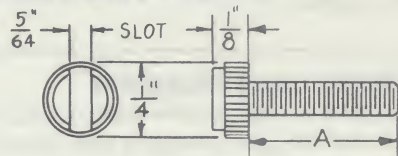
Dim. "A"	Part No.
3/8"	4653-6
1/2"	4653-8
3/4"	4653-12
1"	4653-16

4664 SERIES 6-32NC-2



Dim. "A"	Part No.
3/8"	4664-6
1/2"	4664-8
3/4"	4664-12
1"	4664-16

4665 SERIES 4-40NC-2



Dim. "A"	Part No.
3/8"	4665-6
1/2"	4665-8
3/4"	4665-12
1"	4665-16

Screws are Stainless Steel-type 303.